VERICEL

ANALYST AND INVESTOR DAY

APRIL 11, 2018

Agenda

Welcome and Introduction

- Nick Colangelo, President and CEO

MACI

- Product and Clinical Overview – David Recker, M.D., Senior Advisor, Clinical
- MACI Case Study – Eric Strauss, M.D., NYU Langone Health
- MACI Case Study – Sabrina Strickland, M.D., Hospital for Special Surgery
- Commercial Update – Dan Orlando, Chief Operating Officer
- Patient Story – Dara Torres
- MACI Q&A

Epicel

- Product and Clinical Overview – David Recker
- Epicel Case Study – Jeffrey Litt, D.O., University of Missouri Health Care
- Epicel Case Study – William Dominic, M.D., University of California San Francisco - Fresno
- Commercial Update – Dan Orlando
- Epicel Q&A

Financial Overview

- Gerard Michel, Chief Financial Officer and Vice President of Corporate Development

Closing Remarks

- Nick Colangelo

Safe Harbor

This presentation contains forward-looking statements, including, without limitation, statements concerning anticipated progress, objectives and expectations regarding profitability, growth in revenue, the commercial potential of our products, intended product development, clinical trial and regulatory plans and progress, objectives and expectations, all of which involve certain risks and uncertainties. These statements are often, but are not always, made through the use of words or phrases such as “anticipates,” “intends,” “estimates,” “plans,” “expects,” “we believe,” “we intend,” “target,” “goals” and similar words or phrases, or future or conditional verbs such as “will,” “would,” “should,” “potential,” “could,” “may,” or similar expressions. Actual results may differ significantly from the expectations contained in the forward-looking statements.

Among the factors that may result in differences are the inherent risks and uncertainties associated with our financial goals, competitive developments, clinical trial and product development activities, regulatory approval requirements, ability to achieve or sustain profitability, our need to generate significant sales to become profitable, potential fluctuations in sales volumes and our results of operations, estimating the commercial potential of our products and product candidates and growth in revenues and improvement in costs, market demand for our products, our ability to secure consistent reimbursement for our products, changes in third party coverage and reimbursement, any disruption or delays in operations at our facilities, our dependence on a limited number of third party suppliers, our ability to maintain and expand our network of direct sales employees our long-term plans and our ability to supply or meet customer demand for our products. These and other significant factors are discussed in greater detail in Vericel’s Annual Report on Form 10-K for the year ended December 31, 2017, filed with the Securities and Exchange Commission (“SEC”) on March 5, 2018, Quarterly Reports on Form 10-Q and other documents filed by the Company with the SEC from time to time.

These forward-looking statements reflect management’s current views and Vericel does not undertake to update any of these forward-looking statements to reflect a change in its views or events or circumstances that occur after the date of this release except as required by law.

Vericel is a leader in advanced cell therapies for the sports medicine and severe burn care markets.

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INVESTMENT HIGHLIGHTS

maci®

LEADING RESTORATIVE CARTILAGE REPAIR PRODUCT

in the sports medicine market

Epicel®

(cultured epidermal autografts)

ONLY PERMANENT SKIN REPLACEMENT

in the severe burn care field

Innovative Advanced Therapy Platform

Combination device/biologics that use a patient's own cells to repair tissue and restore function

Vericel is a leader in advanced cell therapies for the sports medicine and severe burn care markets.

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INVESTMENT HIGHLIGHTS

RECORD Q4 REVENUE

41% increase vs. Q4 2016

Third straight quarter of 30%+ growth vs. prior year

$600M+ CURRENT ADDRESSABLE MARKETS

Underpenetrated and growing

2017 revenues of $63.9 million

Top-Tier Revenue Growth

Driven by momentum of MACI launch uptake and expanded Epicel utilization

Vericel is a leader in advanced cell therapies for the sports medicine and severe burn care markets.

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INVESTMENT HIGHLIGHTS

CONTINUED VOLUME GROWTH

Higher utilization of existing manufacturing capacity will drive further gross margin improvement given < 20% marginal COGS for MACI and Epicel

PREMIUM PRICED PRODUCTS

Concentrated call points provide significant operating margin leverage

Significant Margin Expansion Potential

Vericel is a leader in advanced cell therapies for the sports medicine and severe burn care markets.

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INVESTMENT HIGHLIGHTS

CASH ON HAND

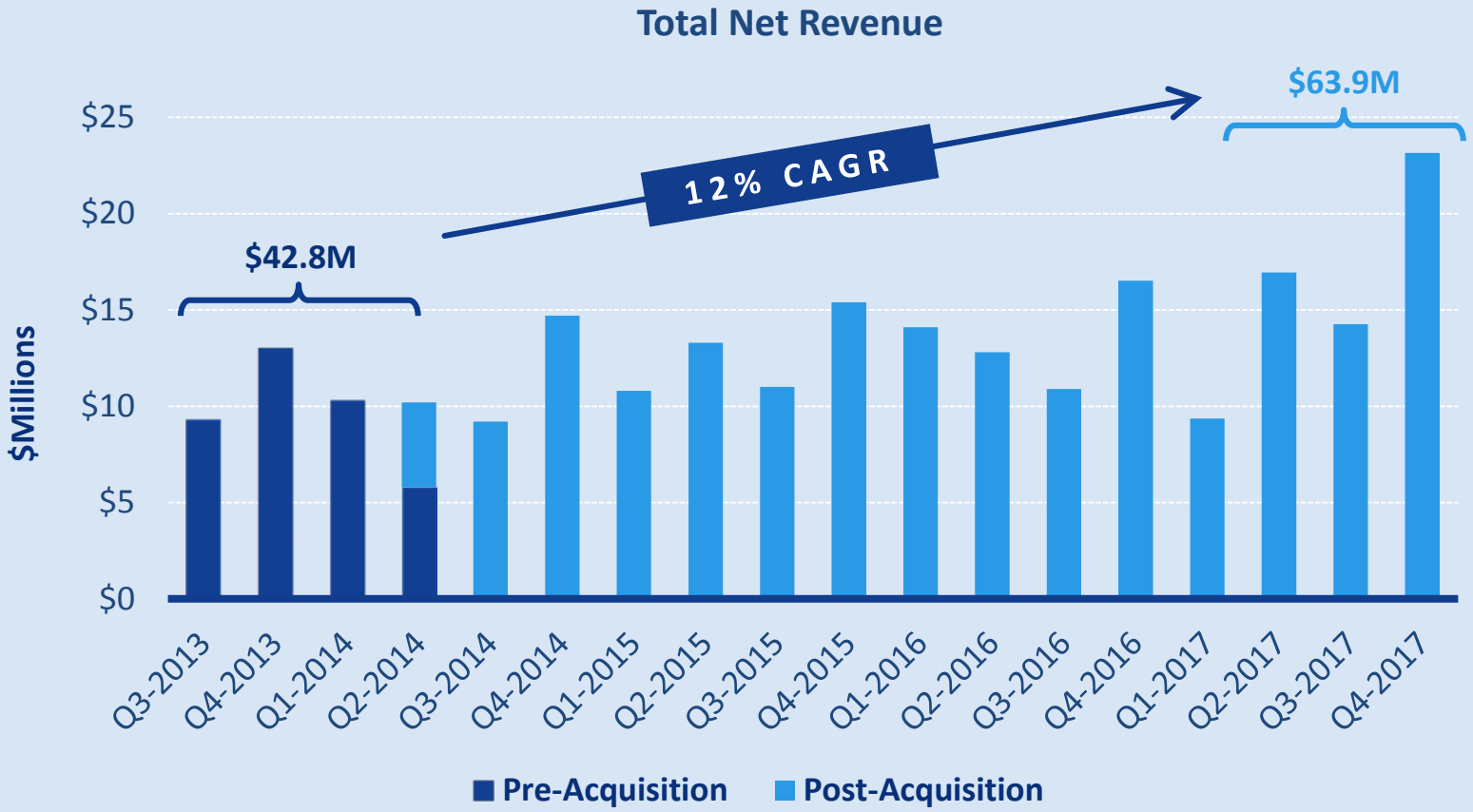
expected to be sufficient to fund operations to reach profitability

STRONG

institutional healthcare shareholder base

Strong Balance Sheet

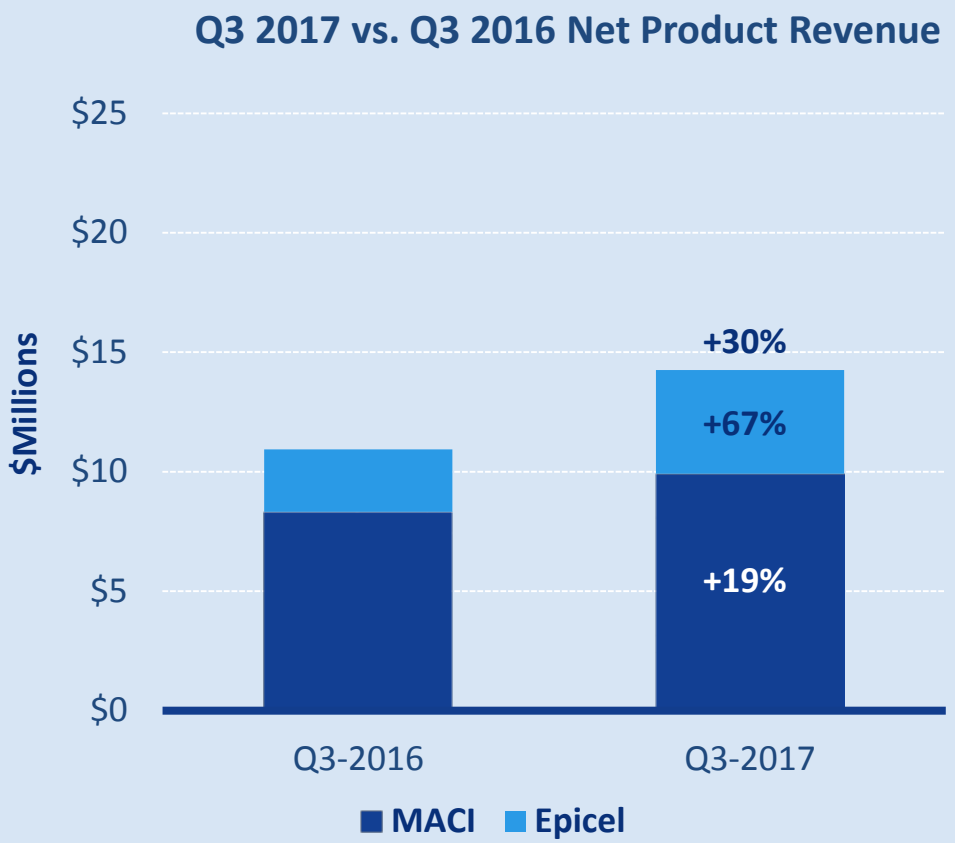
Strong Total Revenue Growth Since Acquisition

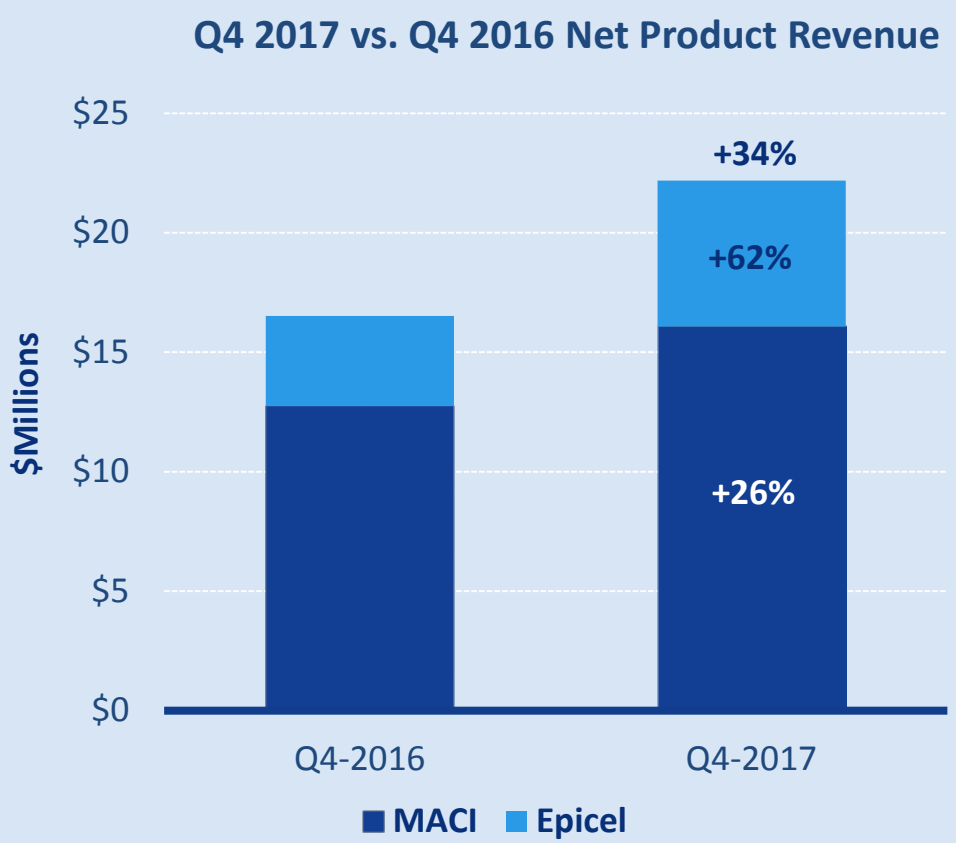


2017 Revenue = $63.9 million

12% CAGR since the acquisition of Carticel/MACI and Epicel

Revenue Growth Accelerating Since MACI Launch





maci
autologous cultured chondrocytes on porcine collagen membrane

Treating Articular Cartilage Defects in the Knee With the MACI® Implant

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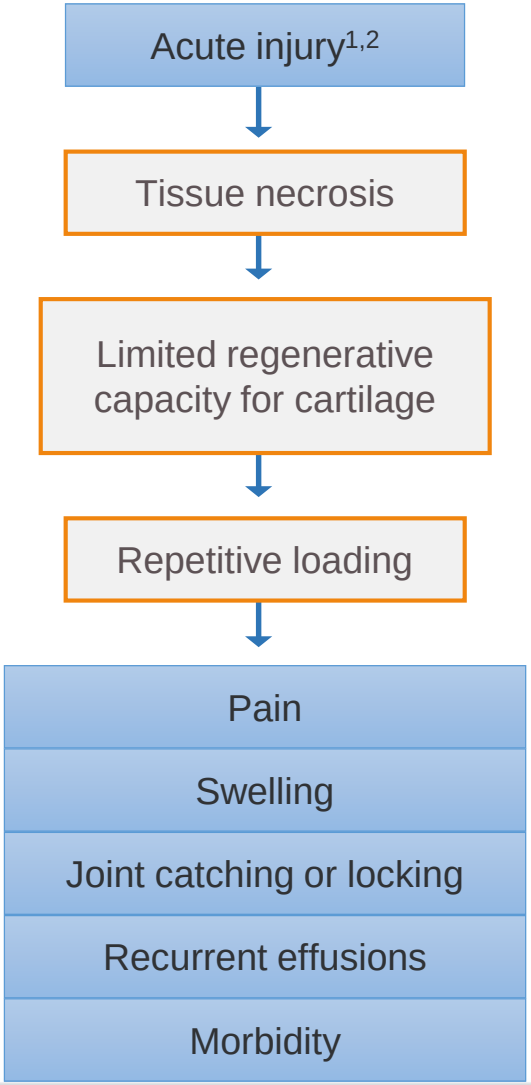
Articular Cartilage Defects of the Knee



Available procedure data has shown[1]:

~900,000

Annual knee cartilage repair procedures

Procedures treating >2 cm^2 full-thickness cartilage defects of the knee make up[2]

5%-6%

Of annual repair procedures

1U.S. MARKETS FOR SPORTS MEDICINE PRODUCTS; MedTech Insight, Report #A332, Oct 2014; 2Hjelle et al. Arthroscopy. 2002,18(7):730–4; Aroen et al. Am J Sports Med. 2004,32(1):211-215; Figueroa et al. Arthroscopy, 2007,23(3):312-315; Curl et al. Arthroscopy. 1997, 13(4): 456-460; Flanigan et al. Med Sci Sports Exerc. 2010, 42(10): 1795-801

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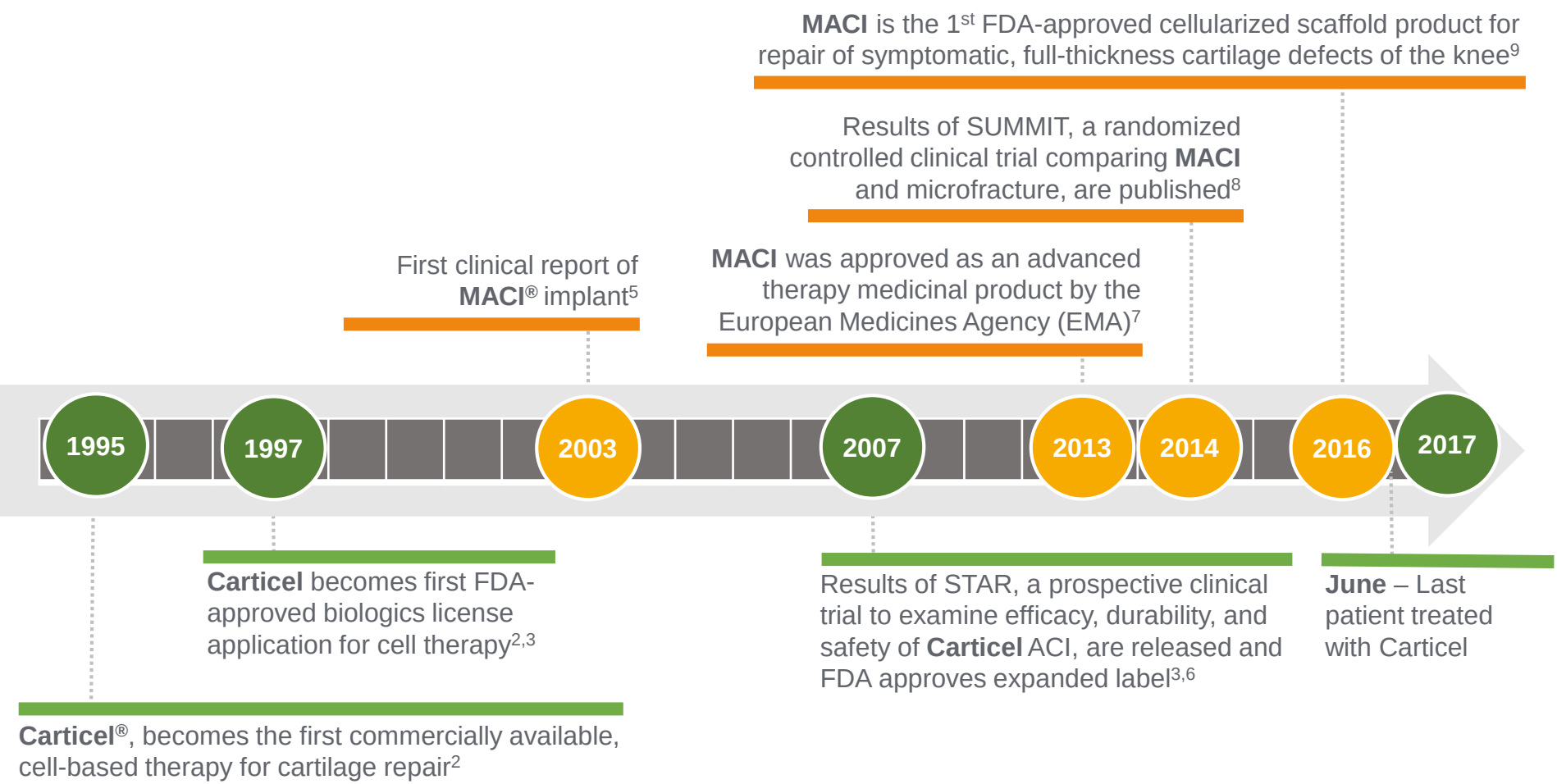
Historical Timeline of Autologous Chondrocyte Implantation (ACI)

ACI uses cultured chondrocytes to repair deep cartilage defects of the knee



[1]Brittberg M, et al. *N Engl J Med.* 1994;331(14):889-895. [2]A History of Firsts.. [3]Carticel [prescribing information]. Cambridge, MA: Vericel Corporation; 2015. [4]Bentley G, et al. *J Bone Joint Surg Br.* 2003; 85B(2):223-230. [5]Cherubino P, et al. *J Orthop Surg.* 2003;11(1):10-15. [6]Zaslav K, et al. *Am J Sports Med.* 2009;37(1):42-55. [7]European Medicines Agency press release. EMA website. http://www.ema.europa.eu/ema/index.jsp?curl=pages/news_and_events/news/2013/04/news_detail_001772.jsp&mid=WC0b01ac058004d5c1. Accessed December 12, 2016. [8]Saris D, et al. *Am J Sports Med.* 2014;42(6):1384-1394. [9]MACI [prescribing information]. Cambridge, MA: Vericel Corporation; 2016.

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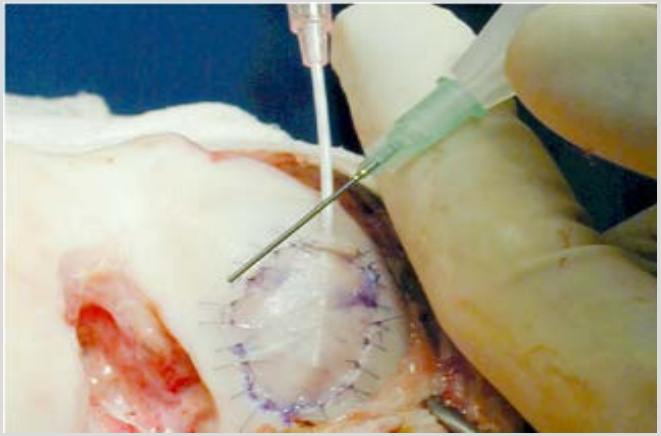
MACI Administration Advantages

CARTICEL



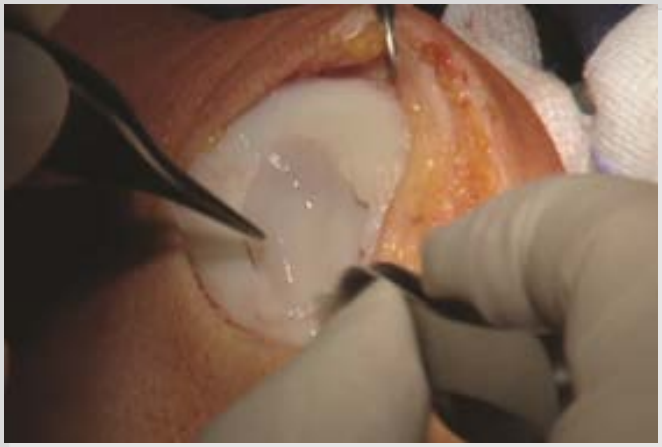
Effective in a challenging patient population

- Moderate to large sized chronic, symptomatic lesions that have failed a primary treatment

Limitations:

- Technically exacting procedure requiring arthrotomy, periosteal patch harvest and sutures
- Extended surgical time

MACI



3rd generation ACI

- Less invasive ACI
- Easier administration
- Eliminates periosteal harvest and sutures
- Significant reduction in surgical time
- Uniform distribution of cells
- Improved post-operative course

MACI (autologous cultured chondrocytes on porcine collagen membrane)

Indication

MACI® is an autologous cellularized scaffold product indicated for the repair of symptomatic, single or multiple full-thickness cartilage defects of the knee with or without bone involvement in adults.

Limitations of Use

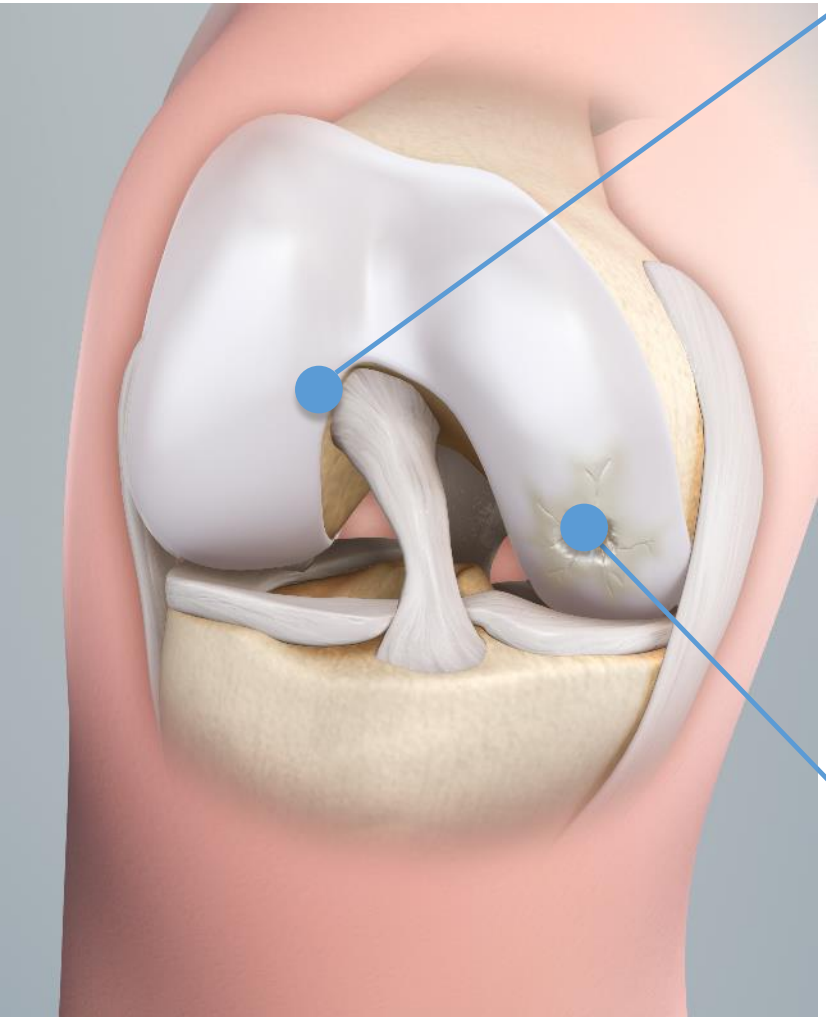
- Effectiveness of MACI in joints other than the knee has not been established
- Safety and effectiveness of MACI in patients over the age of 55 years have not been established

Dosage and Administration

For autologous implantation only

- The amount of MACI implanted depends on the size (surface area in cm^2) of the cartilage defect
- MACI should be trimmed to the size and shape of the defect and implanted with the cell-side down

MACI Overview



1

Defect assessment, cartilage biopsy, and primary expansion
(~1 week)

2

Cells are expanded
(~2 weeks)

3

Cells are seeded on a collagen membrane
(2-4 days)

4

Chondrocyte viability and screening assays

5

MACI is implanted through mini-arthrotomy with fibrin sealant

Brittberg M, et al. *Am J Sports Med*. 2010;38(6):1259-1271.

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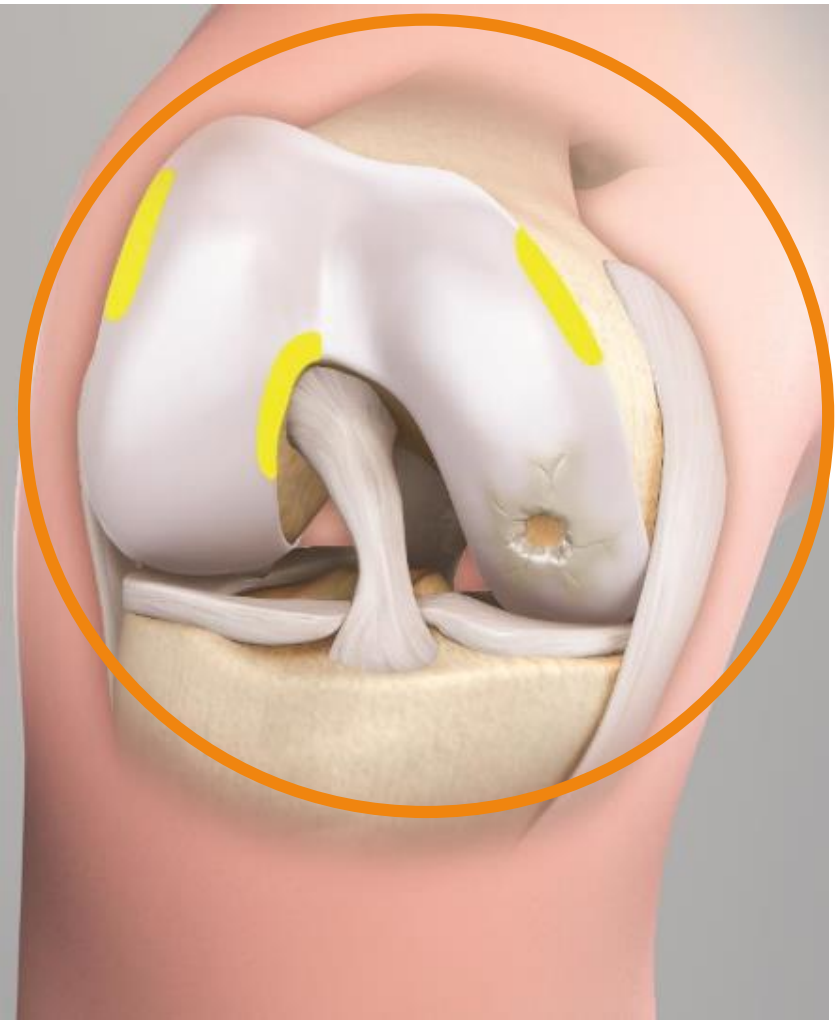
MACI Procedure:

1 Cartilage Biopsy: Three Step Process



I MACI eligibility is confirmed via arthroscopy[1]

- At least 1 Outerbridge grade III-IV focal cartilage defect in the knee
- Defect ≥2 cm^2
- Stable knee
- Intact or partial meniscus (≥50% of functional meniscus remaining)

II Cartilage tissue collected[2]

200-300 mg healthy cartilage tissue collected from non–load-bearing area of the knee

Recommended sites include: Lateral intercondylar notch and superior medial or lateral trochlear ridge

III Biopsy tissue is packed and shipped to Vericel using supplied transport kit

[1]Saris D, et al. *Am J Sports Med*. 2014;42(6):1384-1394. [2]MACI Surgical Manual. Vericel Corporation 2016.

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maci autologous cultured chondrocytes on porcine collagen membrane

MACI Procedure:
Chondrocyte Propagation and Membrane Seeding

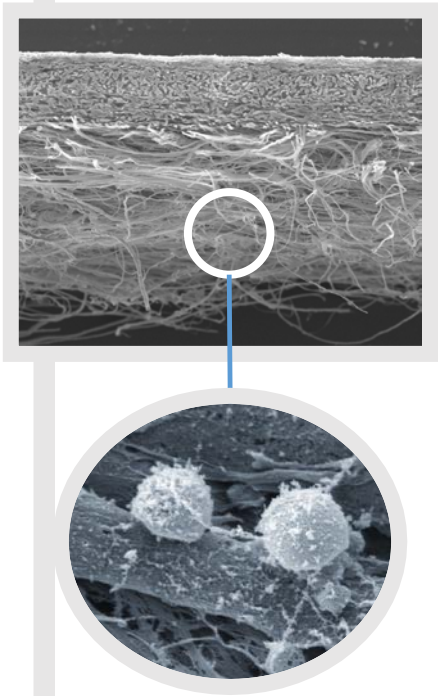
2 **Chondrocytes are isolated from biopsy tissue and cryopreserved[1]**

3 **Cells are then seeded on a type I/III collagen membrane before being shipped to the surgeon in a sterile, sealed polystyrene dish[2]**

Each MACI implant is released at a density of at least 500,000 cells per cm^2

The MACI implant lays the foundation for a homogenous distribution of the cultured cells into the defect

Properties of the ACI-Maix™ Membrane[1]



Smooth surface
- Dense collagen fibers inhibit cell migration into the joint cavity
- Oriented toward the joint cavity

Rough surface
- Less dense collagen fibers aid in cell attachment
- Oriented toward the subchondral bone

Chondrocytes attach to the rough surface of the membrane via cytoplasmic projections[3]

The collagen membrane provides a protective barrier for the new formed tissue until it is resorbed over a period of at least 6 months following implantation[2-5]

[1]Brittberg M. *Am J Sports Med.* 2010;38(6):1259-1271. [2]MACI [prescribing information]. Cambridge, MA: Vericel Corporation; 2016. [3]Zheng MH, et al. *Tissue Eng.* 2007;13(4):737-746. [4]Gigante A, et al. *Knee Surg Sports Traumatol Arthrosc*. 2007;15(1):88-92. [5]Willers C, et al. *Tissue Eng.* 2005;11(7-8):1065-1076.

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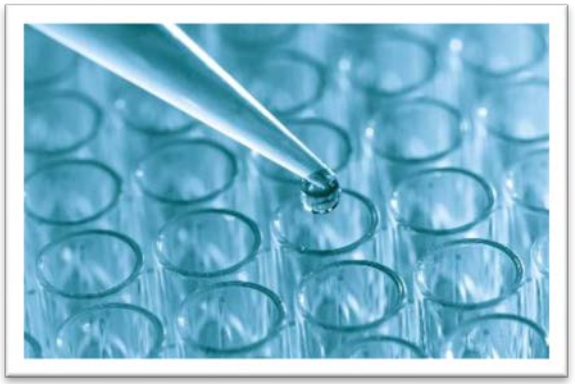
MACI Procedure:
Chondrocyte Viability and Screening Assays

4 Prior to shipment, each MACI implant must past rigorous release assays for:

- ✓ Sterility
- ✓ Endotoxins
- ✓ Viability of chondrocytes
- ✓ Identification of cells
- ✓ Potency
- ✓ Mycoplasma
- ✓ Uniform cell density
- ✓ Minimum cell number

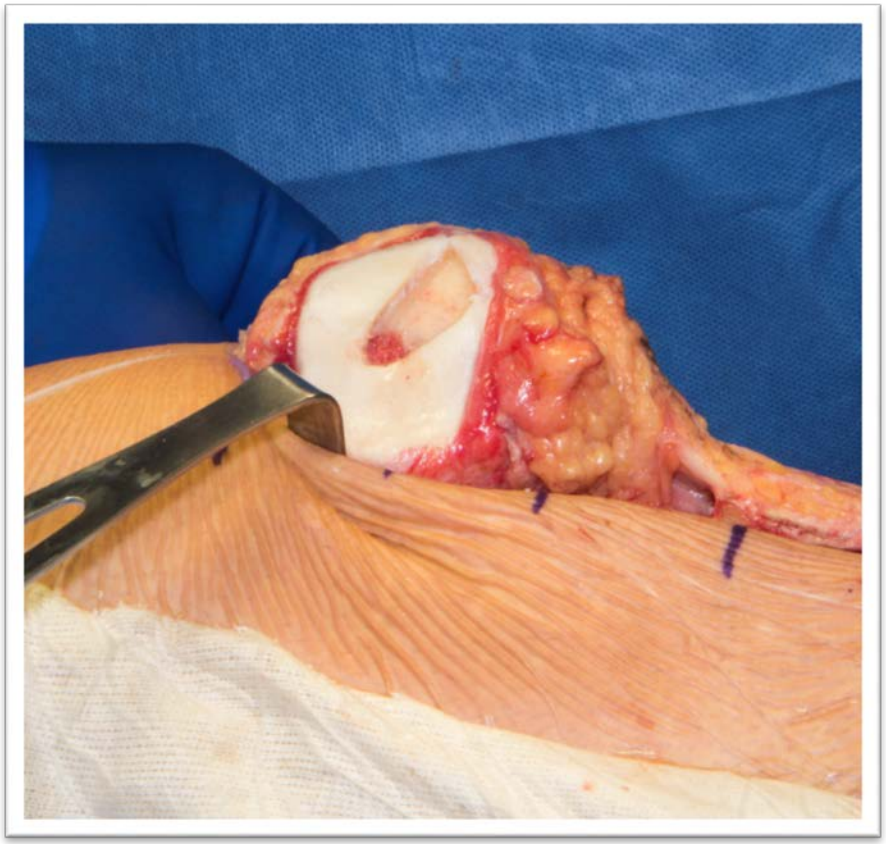


[1]MACI [prescribing information]. Cambridge, MA: Vericel Corporation; 2016. [2]Data on file. Vericel Corporation.

MACI Procedure: Implantation

5 MACI is implanted through mini-arthrotomy

1 **Defect is assessed and debrided**



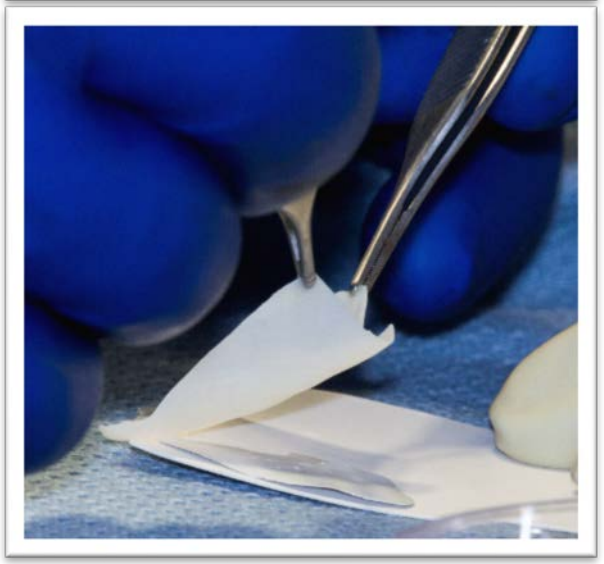
MACI Procedure: Implantation

5 **MACI is implanted through mini-arthrotomy**

1 Defect is assessed and debrided

2 **Template is sized and shaped to match defect**

MACI implant is cut according to template



MACI Procedure: Implantation

5 MACI is implanted through mini-arthrotomy

1 Defect is assessed and debrided

2 Template is sized and shaped to match defect
MACI implant is cut according to template

3 **Thin layer of Fibrin sealant is applied to empty defect**
MACI implant is placed into the defect, with the cells facing the bone bed
Fibrin is then added to the surrounding edge

MACI Procedure: Implantation

5 MACI is implanted through mini-arthrotomy

1 **Defect is assessed and debrided**

2 **Template is sized and shaped to match defect**

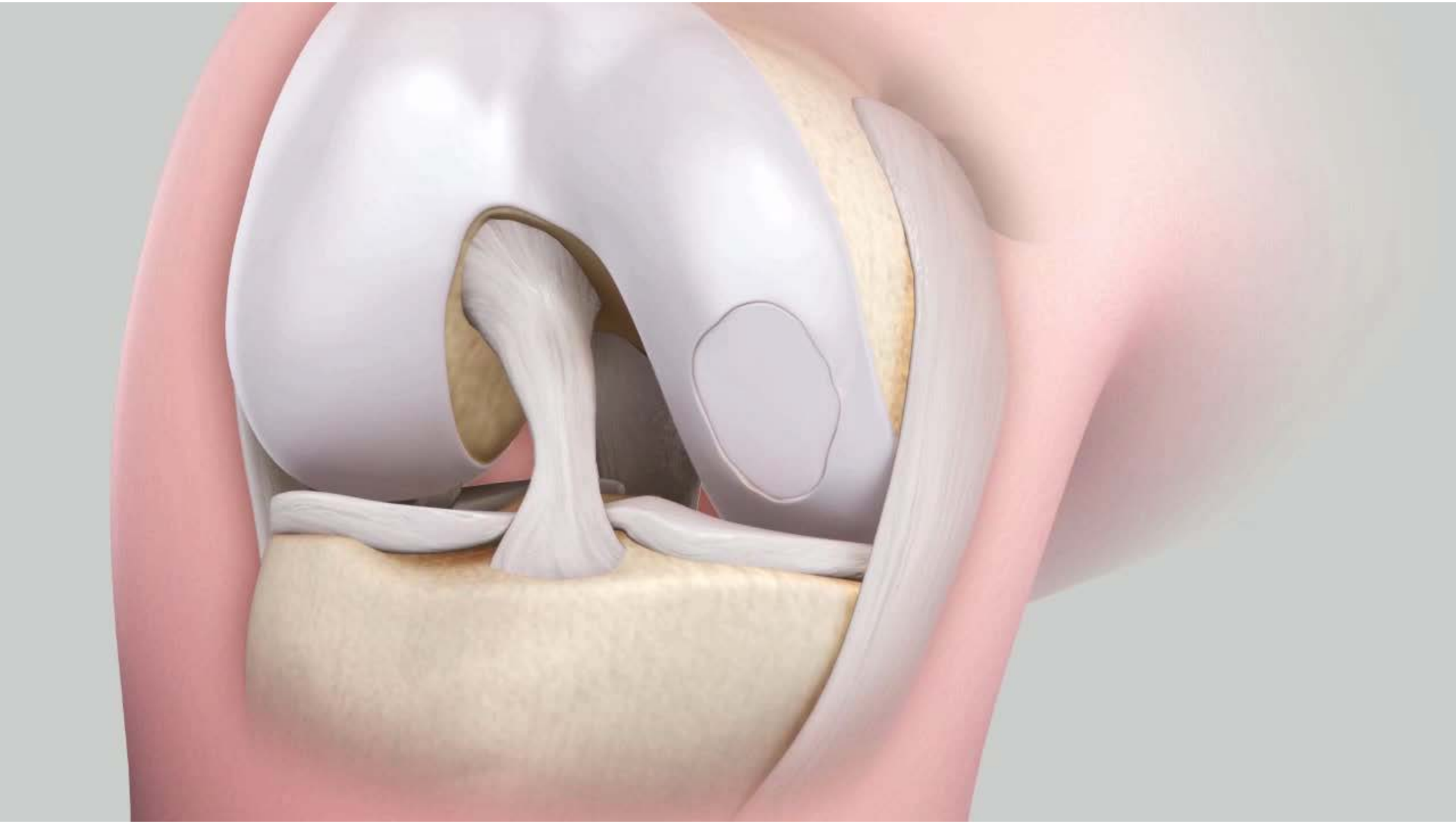
MACI implant is cut according to template

3 **Fibrin sealant is applied to empty defect**

MACI implant is placed on the defect, with the cells facing the bone bed
Fibrin is then added to the surrounding edge

4 **Gentle pressure is applied until the MACI implant is secured**

After fibrin has set, knee is fully extended and flexed several times



Rehabilitation Overview

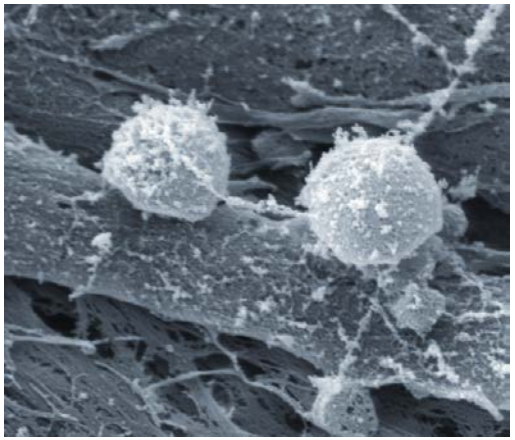
Continuous Passive Motion	Begin 12-24 hours after surgery, continue through 4 to 6 weeks
Weight Bearing	Gradual progression to full weight as early as 6 weeks, as tolerated by the patient
Range of Motion	0°-90° by week 3; increase by 10° per week to 135° Stationary bike at 4 weeks
Strengthening	Quadriceps strength is restored initially followed by CORE lower extremities Elliptical trainer at 2-3 months
Impact Loading	Low impact 5-6 months; jogging 6-7 months Return to sports at 9-12 months, depending on sport and readiness
Special Considerations	Trochlea implants: no open chain or shear loading for first 3 months Combined procedures (eg, ACL repair): follow ACI rehab first

Data on File. Vericel Corporation.

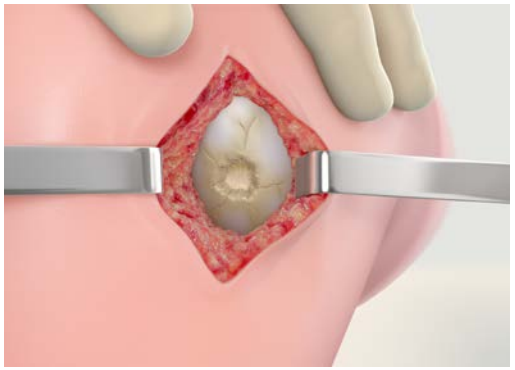
Key Features of MACI

At the time of implantation, **viable cells are distributed** throughout the MACI implant[1]

Cells seeded on the MACI implant **attach to fibers and re-differentiate to their chondrocytic phenotype**[2]



The use of a mini-arthrotomy with fibrin glue enables **less invasive and shorter** implantation surgeries (as compared to second-generation ACI)[3]



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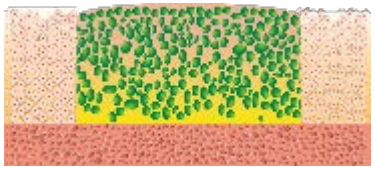
[1]Gigante A, et al. *Knee Surg Sports Traumatol Arthrosc*. 2007;15(1):88-92. [2]Zheng MH, et al. *Tissue Eng.* 2007;13(4):737-746. [3]Brittberg M. *Am J Sports Med.* 2010;38(6):1259-1271.

maci autologous cultured chondrocytes on porcine collagen membrane

Key Features of MACI, cont'd

Following implantation, cultured chondrocytes **migrate from the membrane and attach to the subchondral bone,** allowing for normal biological healing, including **cellular integration** with adjacent cartilage and the subchondral bone[1-3]

- The majority of the membrane is resorbed over a period of approximately 6 months following implantation[4]



An **enhanced rehabilitation program** has been used with MACI[5]

Patients can return to full weight bearing as early as 6 weeks post-surgery, compared with 11 weeks in a traditional rehabilitation program

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[1]Zheng MH, et al. *Tissue Eng.* 2007;13(4):737-746. [2]Brittberg M. *Am J Sports Med.* 2010;38(6):1259-1271. [3]Kirilak Y, et al. *Int J Mol Med.* 2006; 17:551-558. [4]MACI [prescribing information]. Cambridge, MA: Vericel Corporation; 2016 [5]Ebert JR, et al. *Cartilage*. 2010;1(3):180-187.

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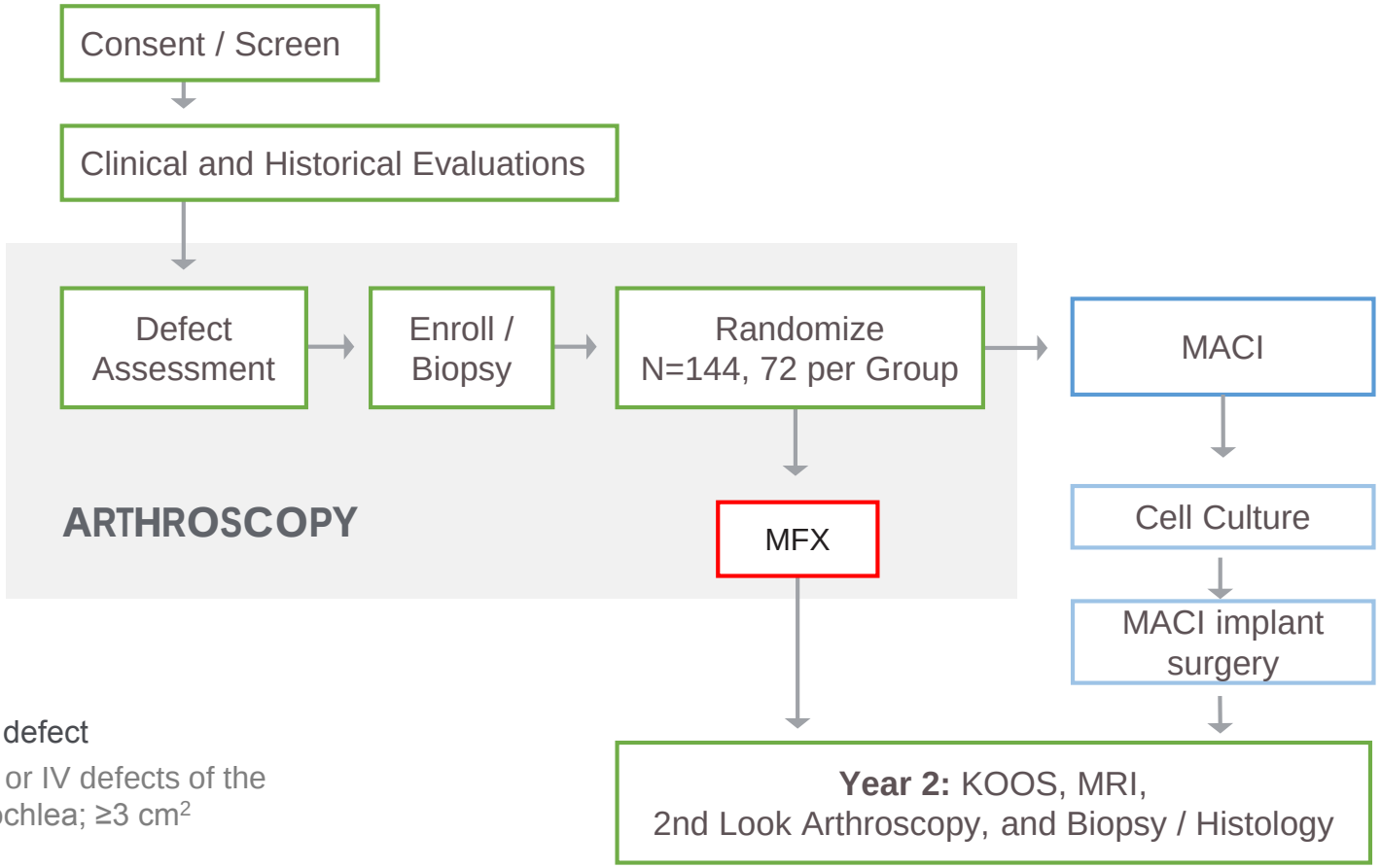
SUMMIT Clinical Study

maci

SUMMIT Trial Design



Eligibility criteria

- 18-55 years of age
- ≥1 symptomatic cartilage defect
  - Outerbridge grade III or IV defects of the MFC, LFC, and/or trochlea; ≥3 cm^2
  - KOOS pain <55
- OCD lesions if no bone graft required
- Intact or partial (≥50%) meniscus
  - Meniscal repair or resection allowed before/during cartilage repair

KOOS, Knee Injury and Osteoarthritis Outcome Score; LFC, lateral femoral condyle; MFC, medial femoral condyle; MFX, microfracture; MRI, magnetic resonance imaging; OCD, osteochondritis dissecans

Saris D, et al. *Am J Sports Med.* 2014;42:1384-1394.

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SUMMIT Endpoints

ENDPOINT	DESCRIPTION
Co-primary	**Change from baseline in KOOS pain and function subscores at 24 months**
Secondary	• Histology (ICRS II) at 24 months • Assessment of defect fill by MRI at 24 months • Responder rate[a] at 24 months • Treatment failure rate[b] at 24 months • Other KOOS subscales (activities of daily living, knee-related quality of life, and other symptoms) at 24 months
Tertiary	• At Weeks 24, 36, 52, and 78: – Change in all KOOS subscales – Response rate[a] – Treatment failure • Other clinical assessments: Modified Cincinnati Knee Rating System and IKDC • Quality of life assessments: SF-12 and EQ-5D at 24 and 48 months • Macroscopic ICRS “Cartilage Repair Assessment” at 48 months
Safety	• TEAEs • Serious adverse events • Subsequent surgical procedures

[a]Defined as the percentage of patients who experienced a ≥10-point improvement in KOOS pain and function subscales after MACI implant or microfracture.
[b]Defined as the percentage of patients who, at any time after week 24, had a patient and physician global assessment result that was the same or worse than at baseline, a <10% improvement in the KOOS pain subscale, or physician-diagnosed failure.

EQ-5D, European Quality of Life 5 dimensions questionnaire; ICRS, International Cartilage Repair Society; KOOS, Knee Injury and Osteoarthritis Outcome Score; MRI, magnetic resonance imaging; SF-12, 12-Item Short Form Health Survey; TEAE, treatment-emergent adverse event

Saris D, et al. *Am J Sports Med.* 2014;42:1384-1394.

Key Features of the SUMMIT Trial

To date, the **largest prospective randomized controlled** trial of knee cartilage repair with the **highest power to show clinical difference**[1]

Designed in accordance with FDA guidance on trials for knee cartilage repair, including[1,2]:

- Choice of microfracture as comparator
- Selection of KOOS pain and function as co-primary endpoints

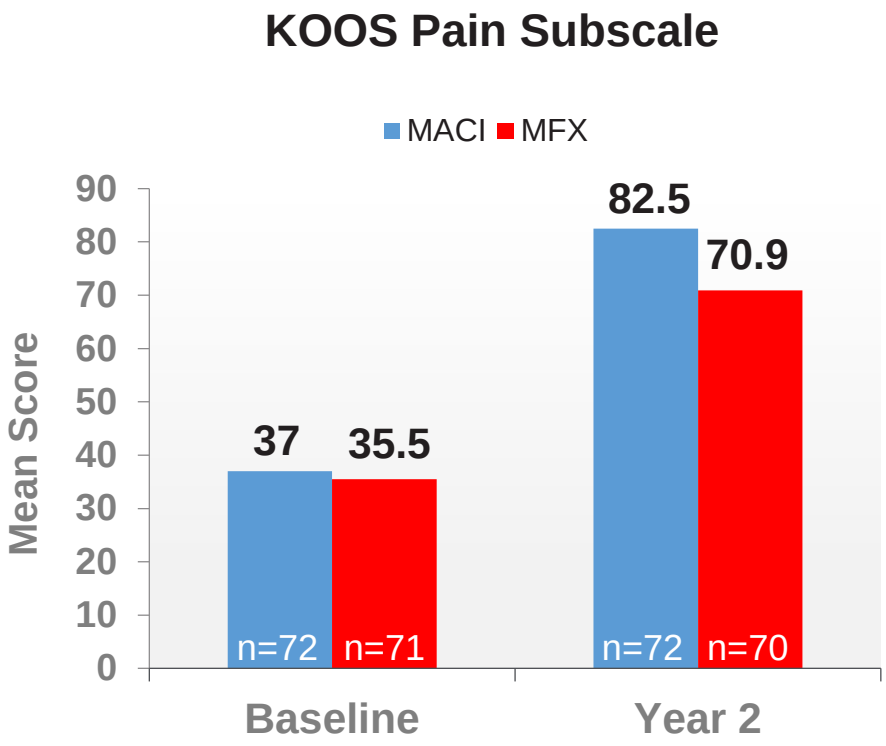
Additional features[1]:

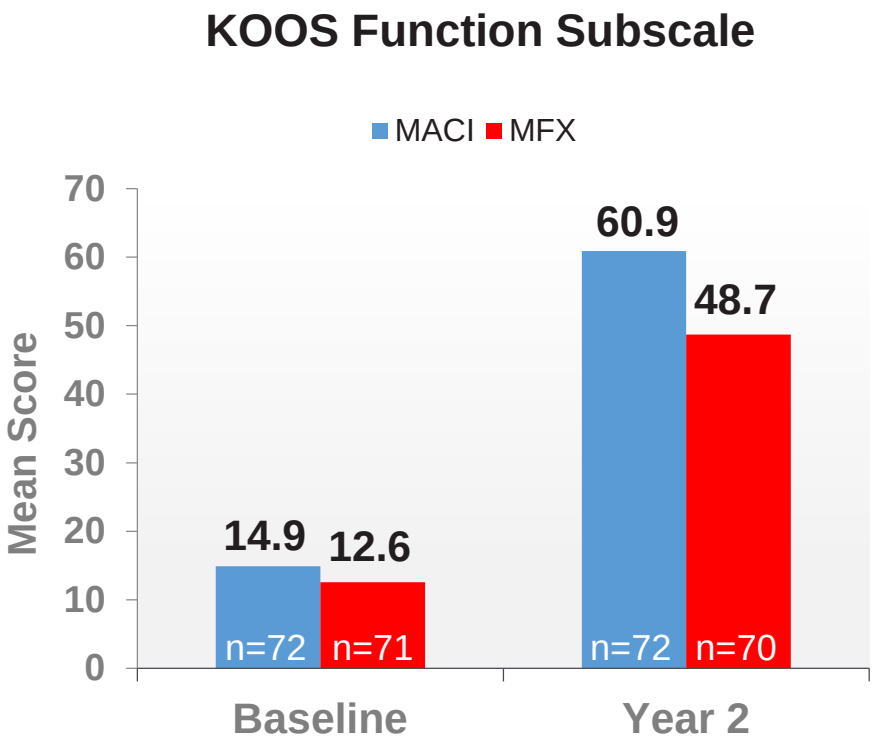
- Multi-center study design allowed for assessment of consistency of outcomes
- Conducted according to Good Clinical Practice (GCP) and principles of the Declaration of Helsinki
- All surgeons were trained on standardized surgical procedures
- Standardized rehabilitation procedures were followed

[1]Saris D, et al. *Am J Sports Med.* 2014;42:1384-1394. 2Food and Drug Administration. Guidance for Industry. Preparation of IIDEs and INDs for Products Intended to Repair or Replace Knee Cartilage. http://www.fda.gov/downloads/BiologicsBloodVaccines/GuidanceComplianceRegulatoryInformation/Guidances/CellularandGeneTherapy/UCM288011.pdf. Accessed February 1, 2017.

KOOS Pain and Function Subscales

Two years after treatment, the change from baseline in KOOS pain and function subscores was significantly higher for **MACI vs MFX** (*P*<0.001) with the co-primary endpoint





KOOS, Knee Injury and Osteoarthritis Outcome Score; MFX, microfracture

Saris D, et al. *Am J Sports Med*. 2014;42:1384-1394.

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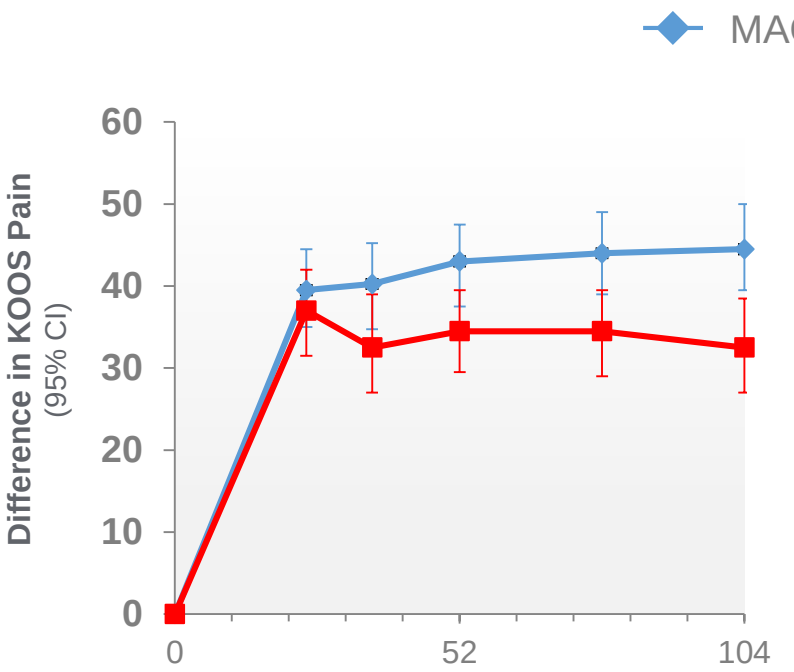
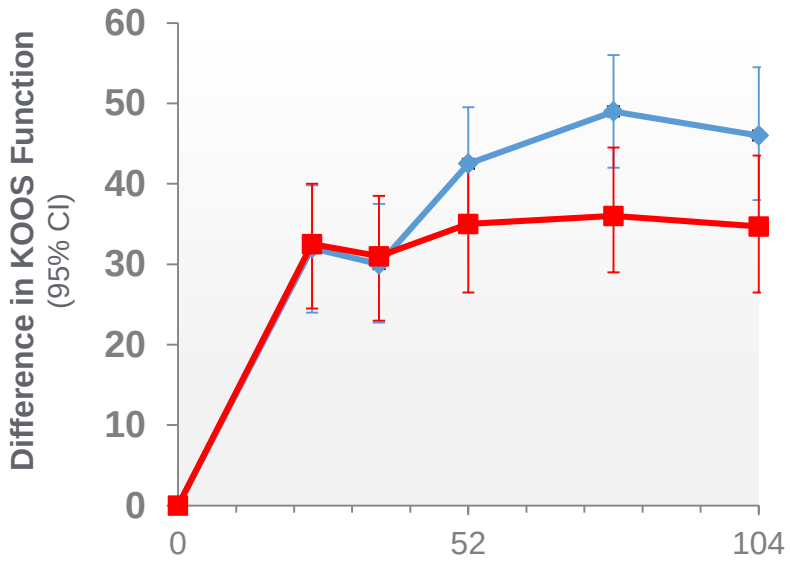
KOOS Pain and Function Subscales:
Changes Over Time

In a post-hoc analysis, the improvement with **MACI over MFX in KOOS pain and function subscores** was observed **early in the treatment**



Weeks	0	24	36	52	78	104
MACI, n	72	65	70	72	72	72
MFX, n	71	64	69	70	69	69



Weeks	0	24	36	52	78	104
MACI, n	72	65	70	72	72	72
MFX, n	71	64	69	70	69	69

Saris D, et al. *Am J Sports Med*. 2014;42:1384-1394.

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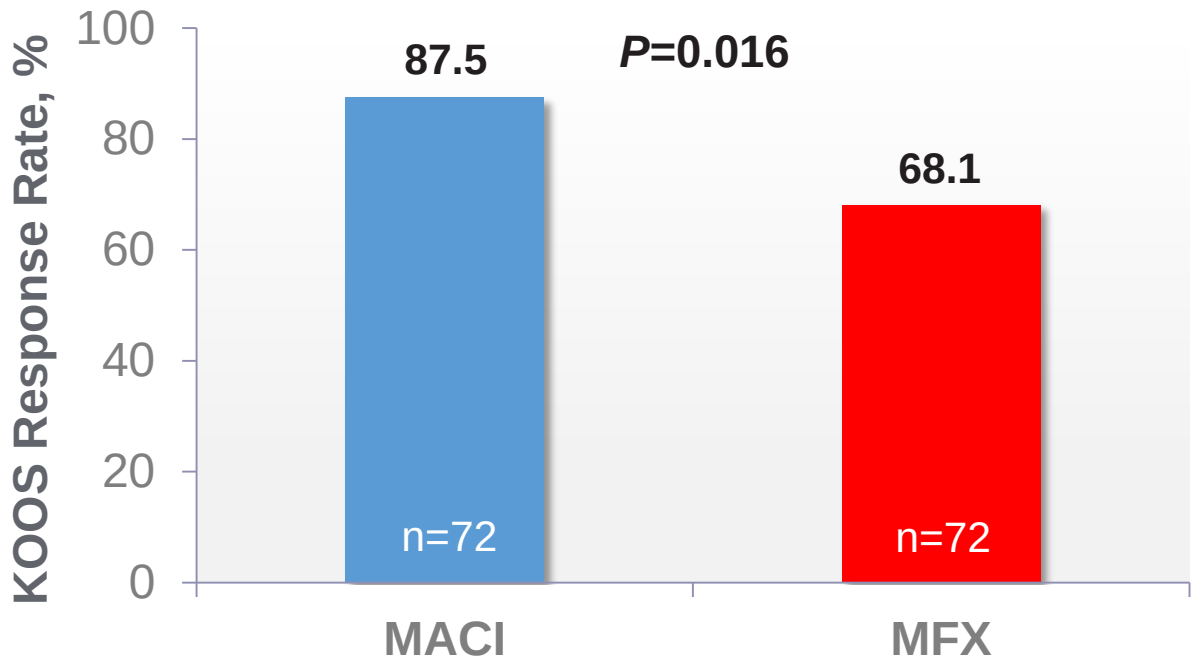
KOOS Response Rate

The proportion of patients who responded to treatment was **higher with MACI** when compared with MFX at 2 years (secondary endpoint)



Response defined as ≥10-point improvement in both pain and function subscores.

KOOS, Knee Injury and Osteoarthritis Outcome Score; MFX, microfracture

Saris D, et al. *Am J Sports Med*. 2014;42:1384-1394.

MACI Clinical Trial Summary

At 2 years, KOOS pain and function had improved from baseline in both treatment groups; the improvement was statistically significantly (*P*=0.001) greater in the MACI group compared with the MFX group

MACI also led to **greater improvement** in the following KOOS subscales:

- **Activities of daily living** (*P*<0.001)
- **Knee-related quality of life** (*P*=0.029)
- **Other symptoms** (*P*<0.001)

KOOS **response rate was greater for MACI** (*P*=0.016)

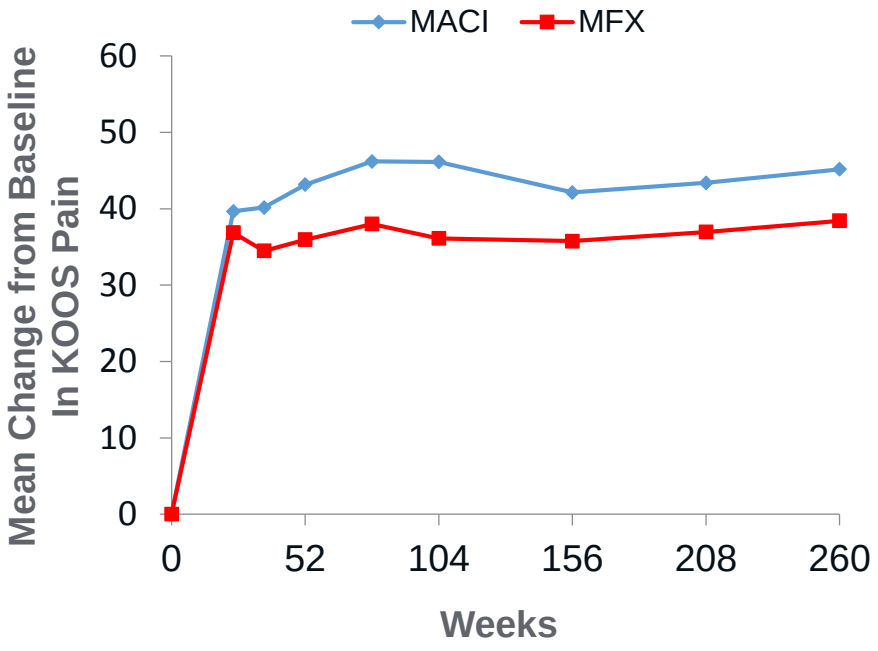
Safety profiles were similar between both treatment groups

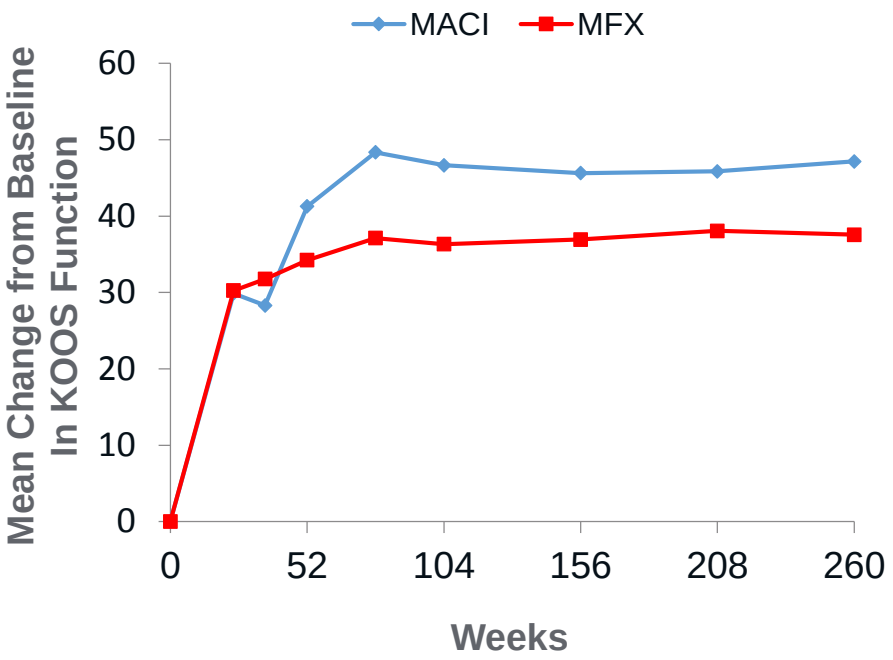
- The most common TEAEs associated with MACI (incidence >10%) were arthralgia, headache, nasopharyngitis, and back pain

Saris D, et al. *Am J Sports Med.* 2014;42:1384-1394.

Difference in Co-Primary Endpoints of KOOS Pain and Function Maintained Over 5 Years in a Volunteer Extension Study

Improvement with MACI vs MFX at 36 weeks was **maintained to 5 years**





Matrix-Applied Characterized Autologous Cultured Chondrocytes Versus Microfacture: Five-Year Follow-up of a Prospective Randomized Trial" and the full abstract is available on pubmed: http://journals.sagepub.com/doi/full/10.1177/0363546518756976

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MACI Case Study Presenters

Eric Strauss, MD

Associate Professor, Orthopaedic Surgery
NYU Langone Health
New York, NY

Sabrina Strickland, MD

Associate Professor, Orthopaedic Surgery
Weill Cornell Medical College
Hospital for Special Surgery
New York, NY

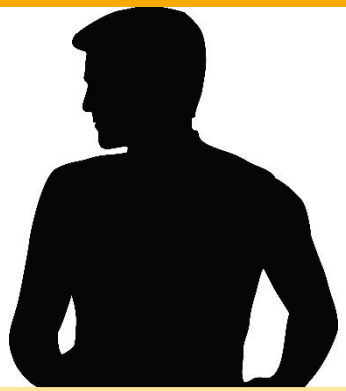
Speakers are paid consultants of Vericel Corporation

The information contained in the following material does not constitute medical advice. The information regarding surgical techniques and rehabilitation are general guidelines. Individual results will vary among patients and depend on many factors. A patient's healthcare provider should consider the circumstances of each patient when considering MACI

Patient Case

Eric Strauss, MD
NYU Langone Health

Case Study



Patient Profile

Physical Exam and Imaging

Arthroscopy

Surgery

Follow-Up and Outcome

- 18 year old healthy, active male collegiate rower
- Six weeks of right knee pain, swelling and mechanical symptoms (catching/locking)
- Started during crew practice
- Treated injury with ice and NSAIDs → no improvement
- No other joint complaints
- No recent fevers, chills, rashes of constitutional symptoms

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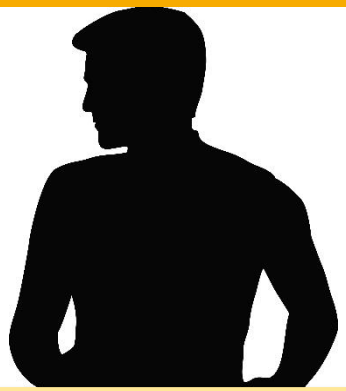
History



Patient Profile

Physical Exam and Imaging

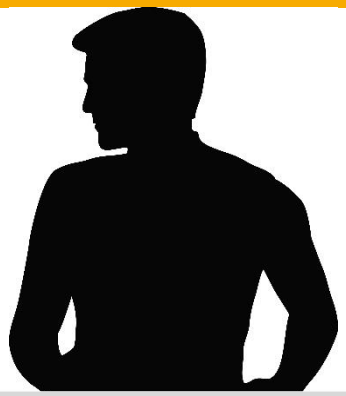
Arthroscopy

Surgery

Follow-Up and Outcome

- Past medical history: None
- Past surgical history: None
- Meds: Aleve
- Family history: None
- Social history: College freshman, denies tabacco use, denies alcohol consumption
- Review of symptoms: No other complaints outside his right knee symptoms

Physical Examination



Patient Profile

Physical Exam and Imaging

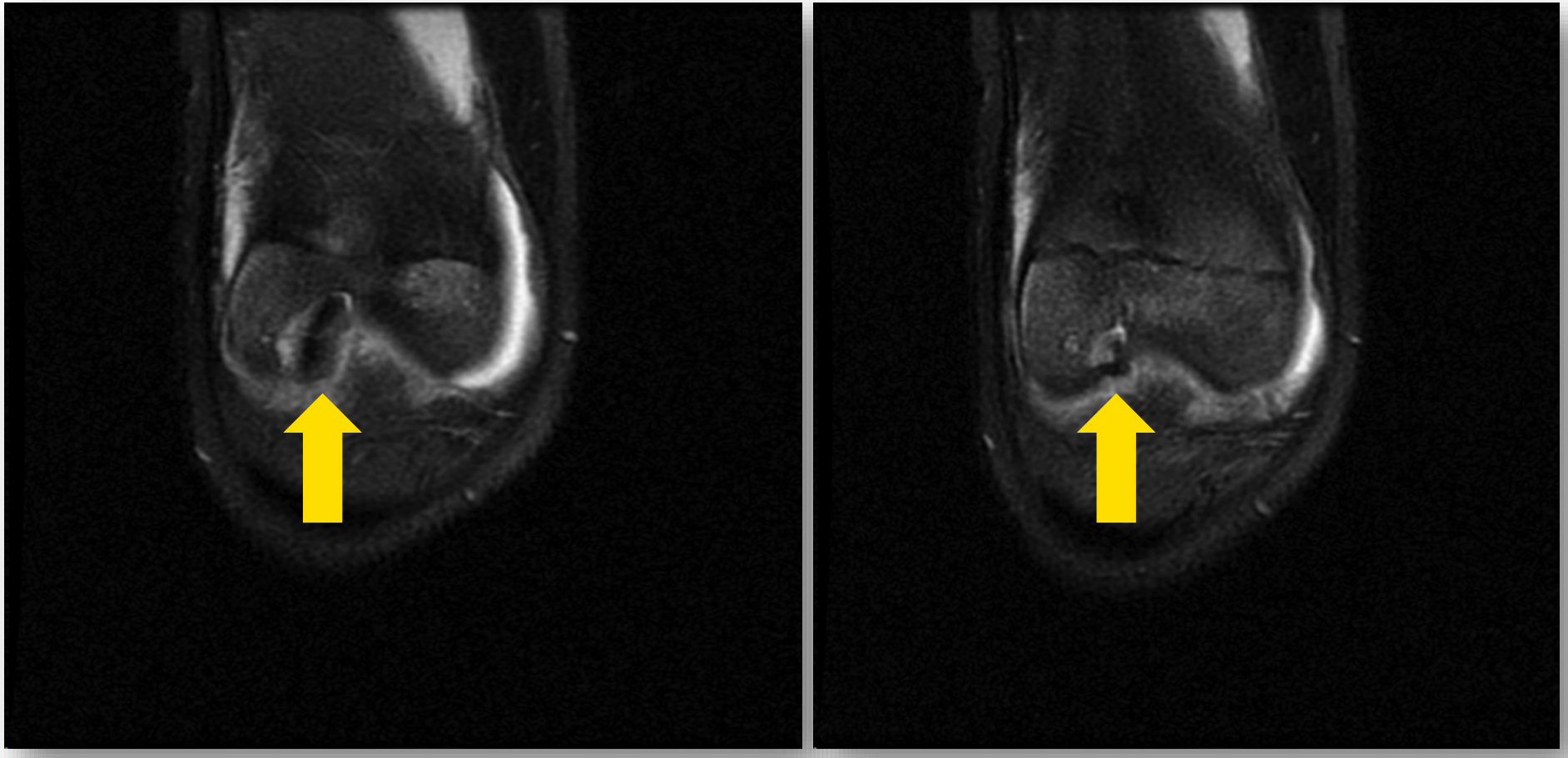
Arthroscopy

Surgery

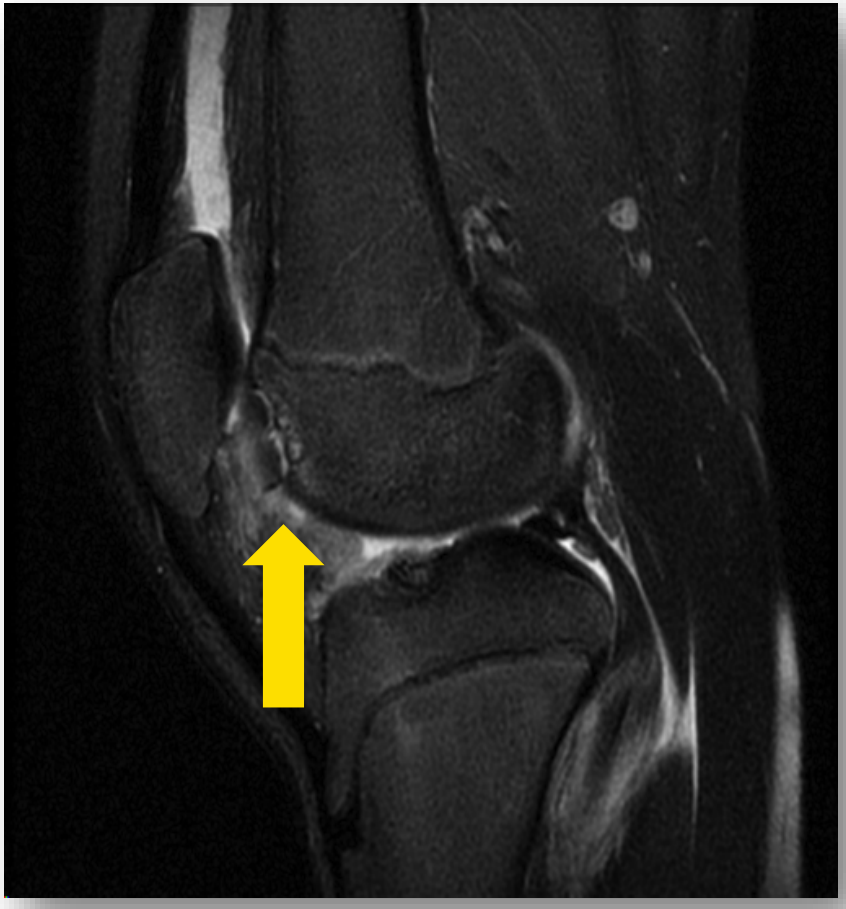
Follow-Up and Outcome

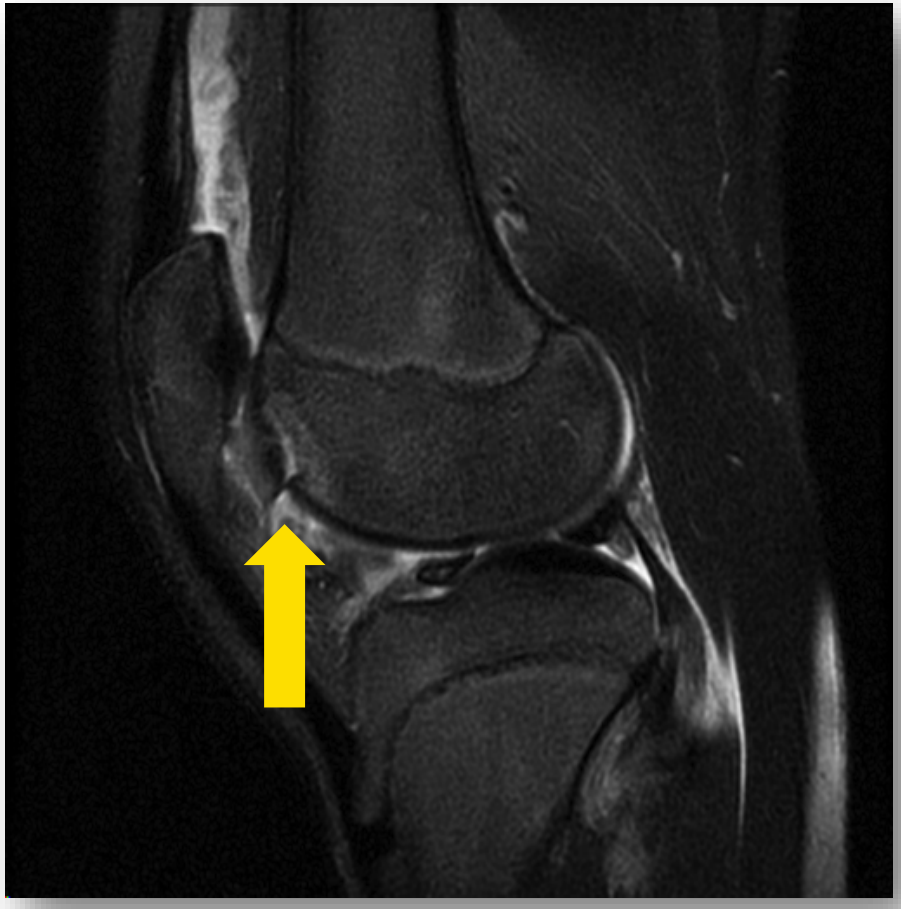
- 6’3” and 147 pounds → BMI = 18.6
- Normal lower extremity alignment
- Right Knee
  - + mild to moderate effusion
  - + tenderness anterolaterally over the lateral trochlea
  - No medial or lateral joint line tenderness
  - Range of motion: 0-125 degrees with pain on end flexion
  - + repetitive painful catch between 20 and 30 degrees of knee flexion
  - Normal ligament exam
  - Normal motor strength
  - Normal neurovascular examination

Imaging: MRI Right Knee - Coronal

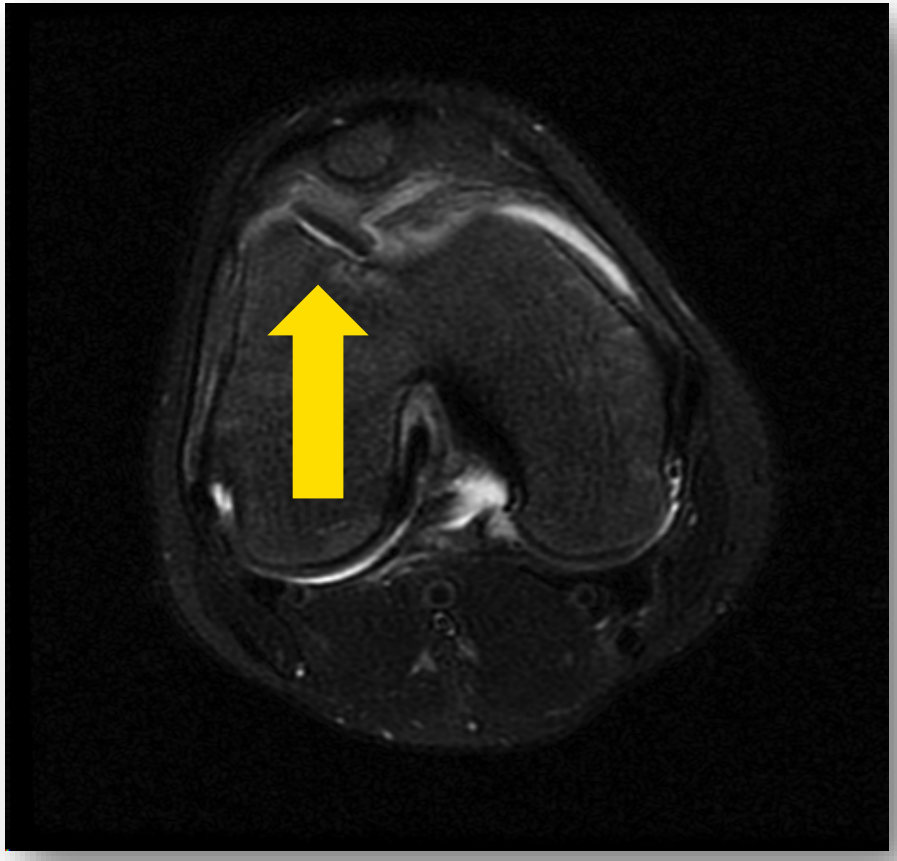


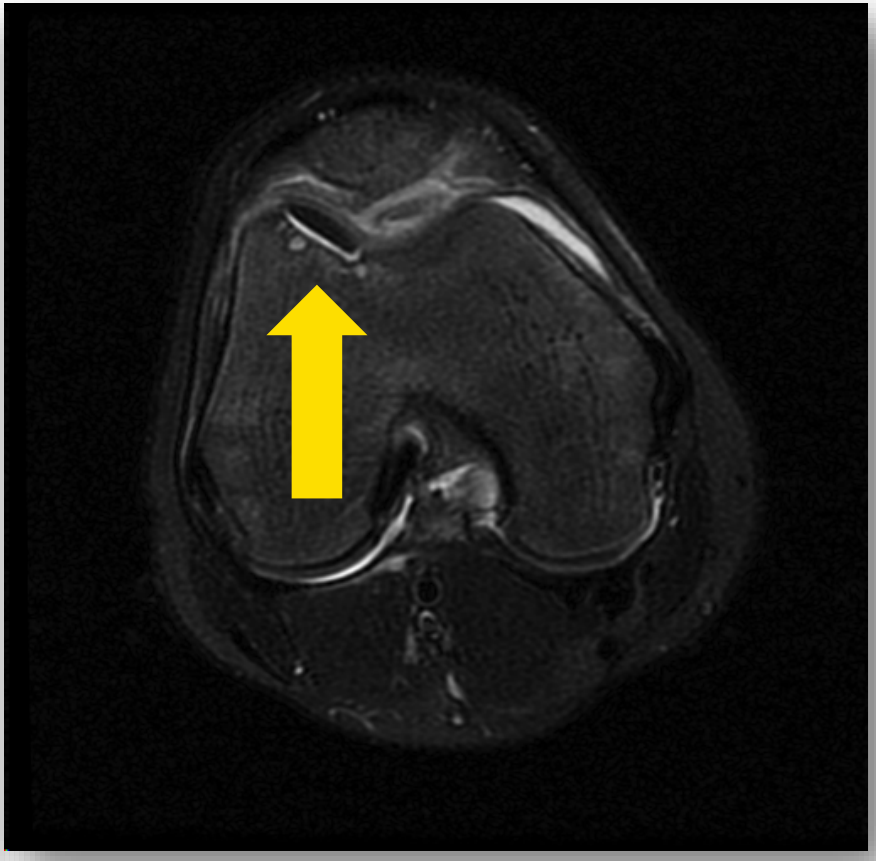
Imaging: MRI Right Knee - Sagittal



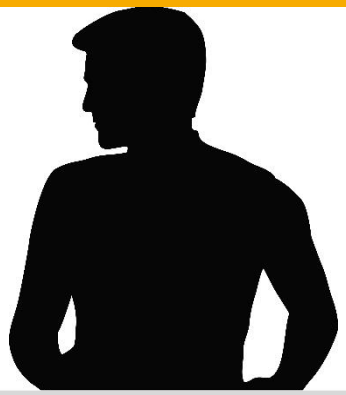


Imaging: MRI Right Knee - Axial





Treatment Plan



Patient Profile

Physical Exam and Imaging

Arthroscopy

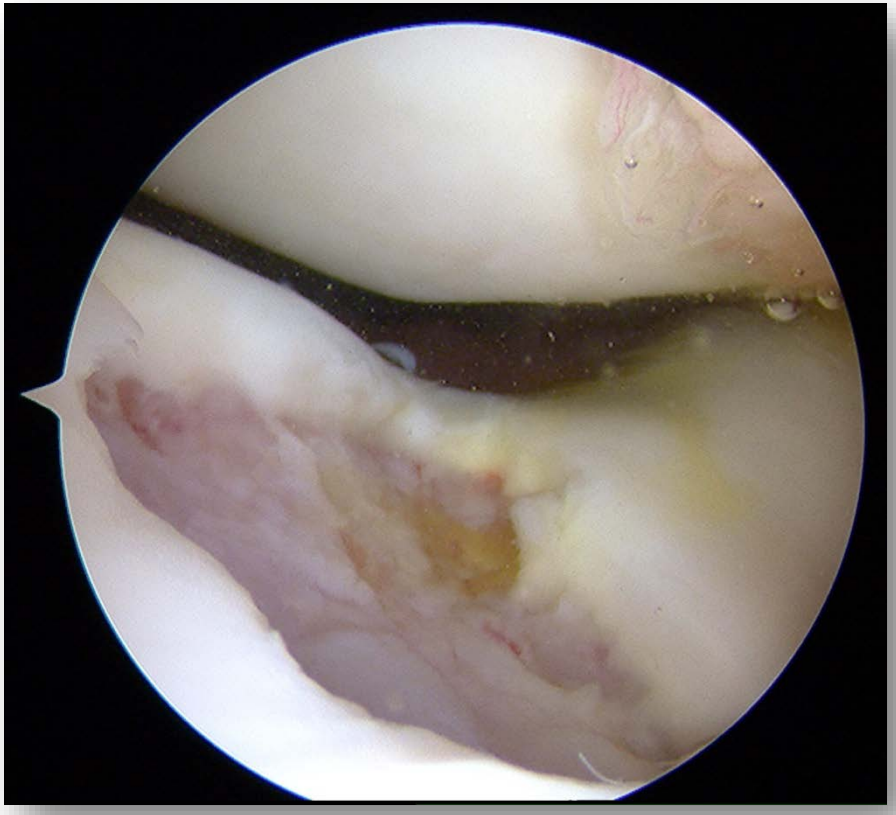
Surgery

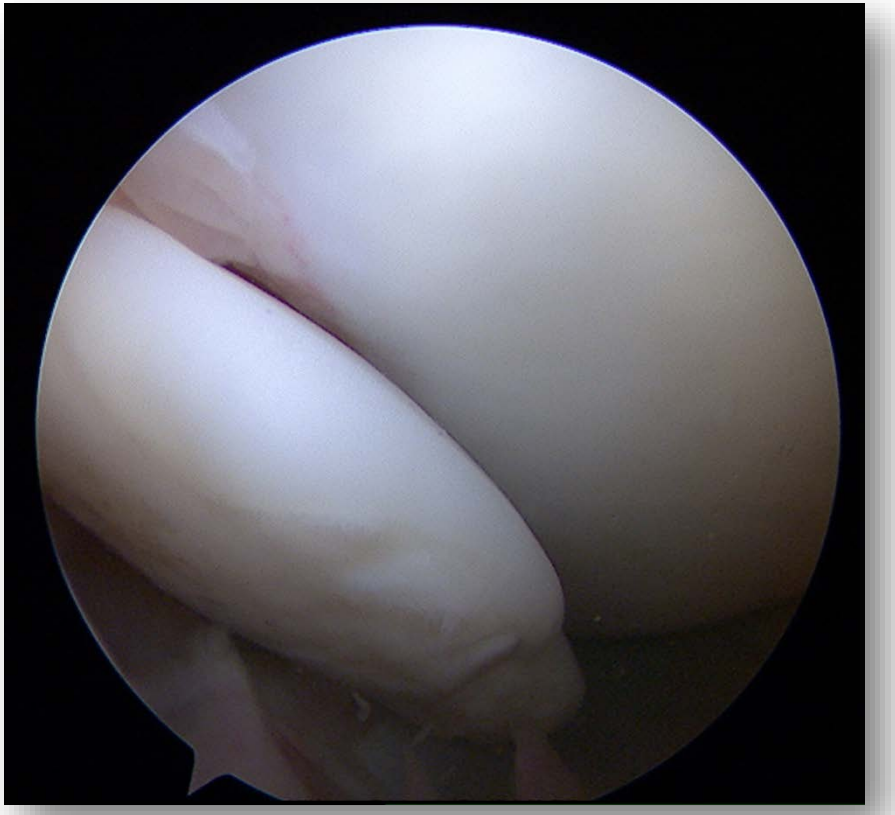
Follow-Up and Outcome

Right Knee Arthroscopy

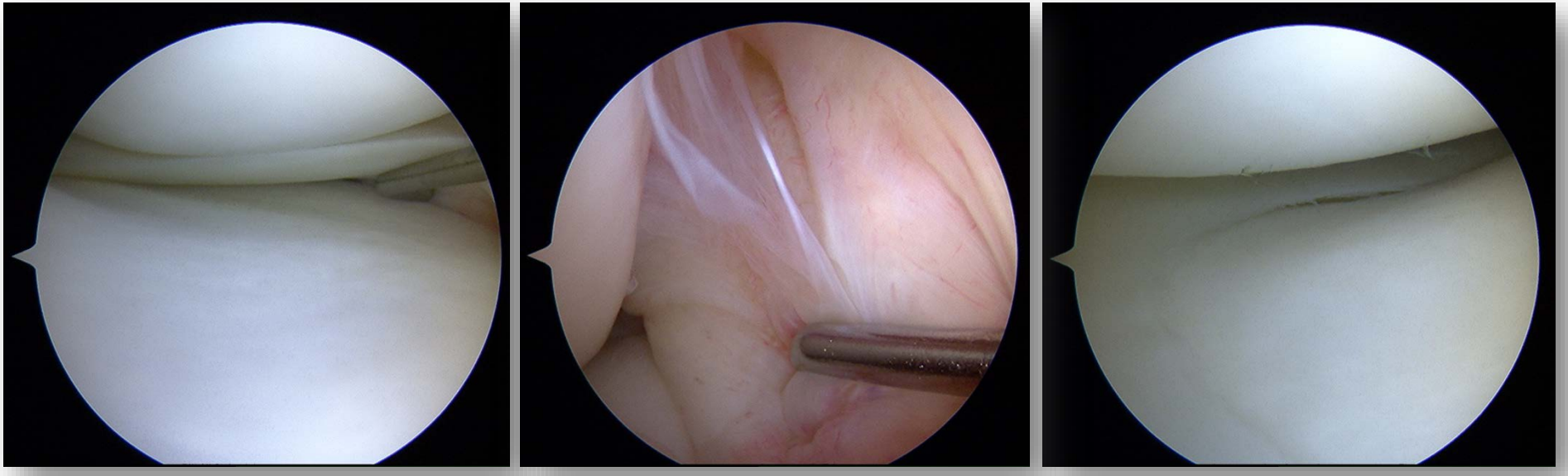
- If bone is present on the undersurface of the displaced fragment → repair with screws
- If no bone is present → cartilage biopsy for future MACI

Imaging: Right Knee Arthroscopy

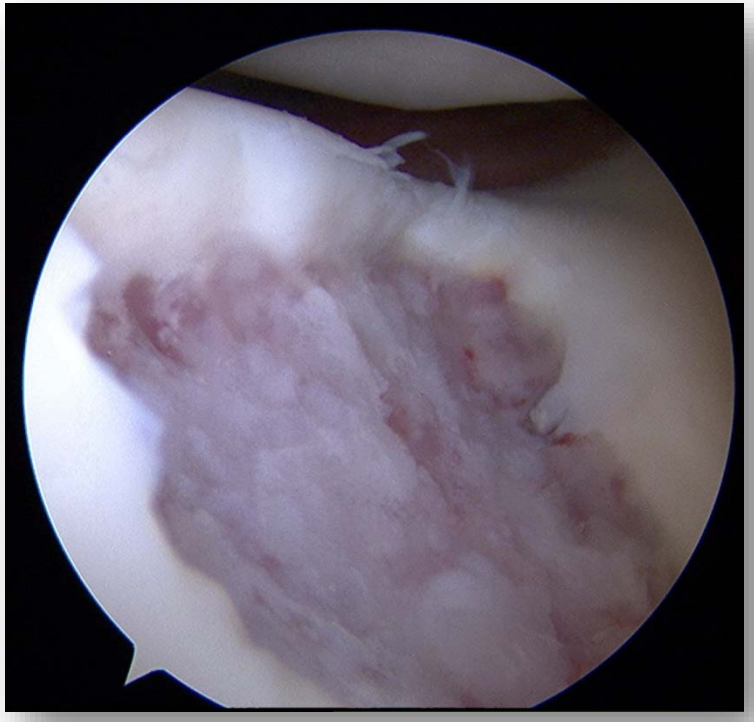


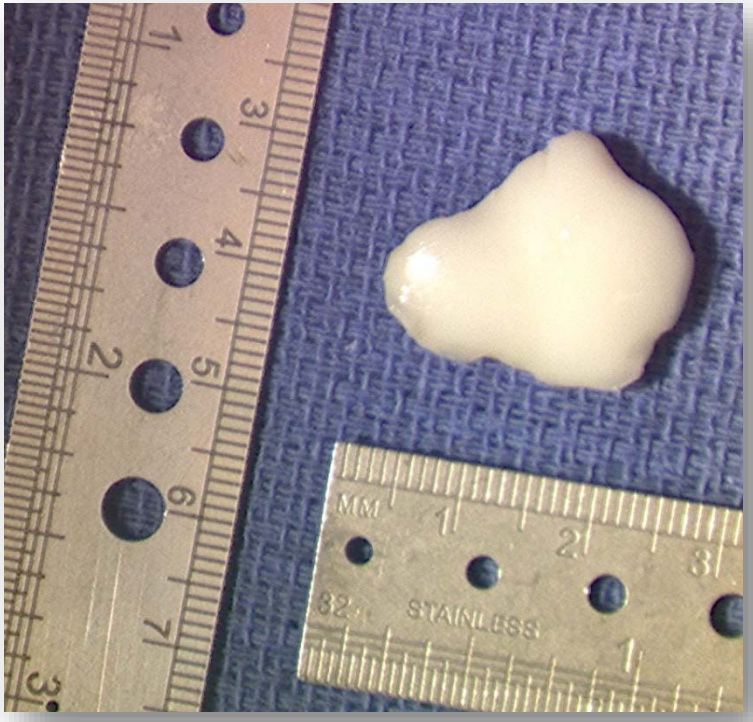


Imaging: Right Knee Arthroscopy



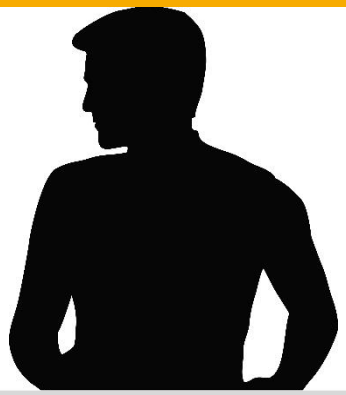
Imaging: Right Knee Arthroscopy





20x20 mm full thickness cartilage lesion of lateral trochlea with little to no bone on fragment (shear injury)

Treatment Plan



Patient Profile

Physical Exam and Imaging

Arthroscopy

Surgery

Follow-Up and Outcome

- Two months of post-operative rehabilitation
- Mechanical symptoms gone but still with pain and swelling episodes
- Tried to row but couldn't secondary to pain and limited ROM

- Plan → MACI Trochlea

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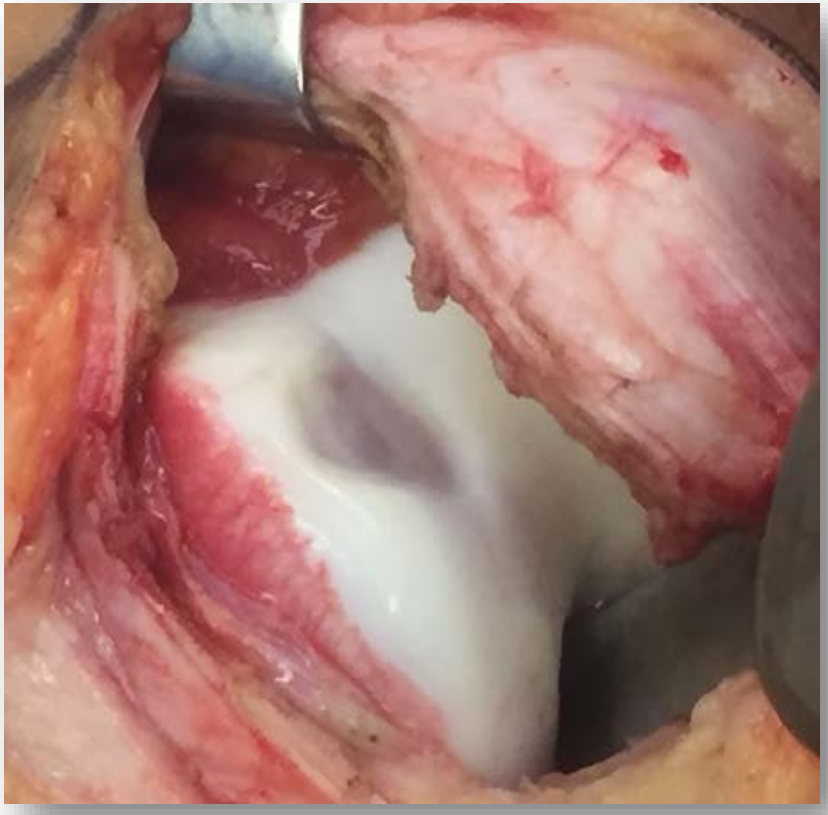
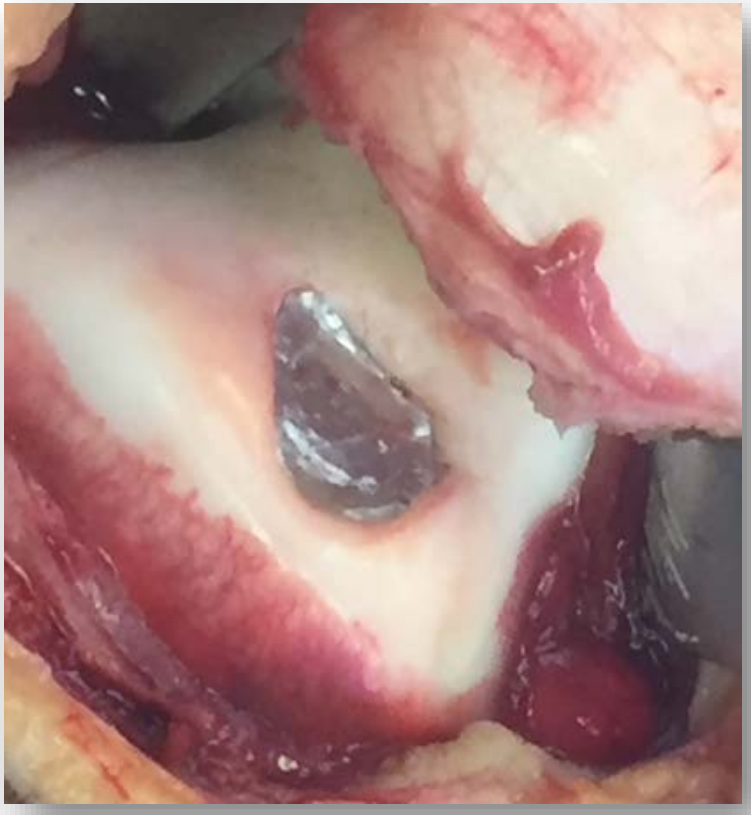
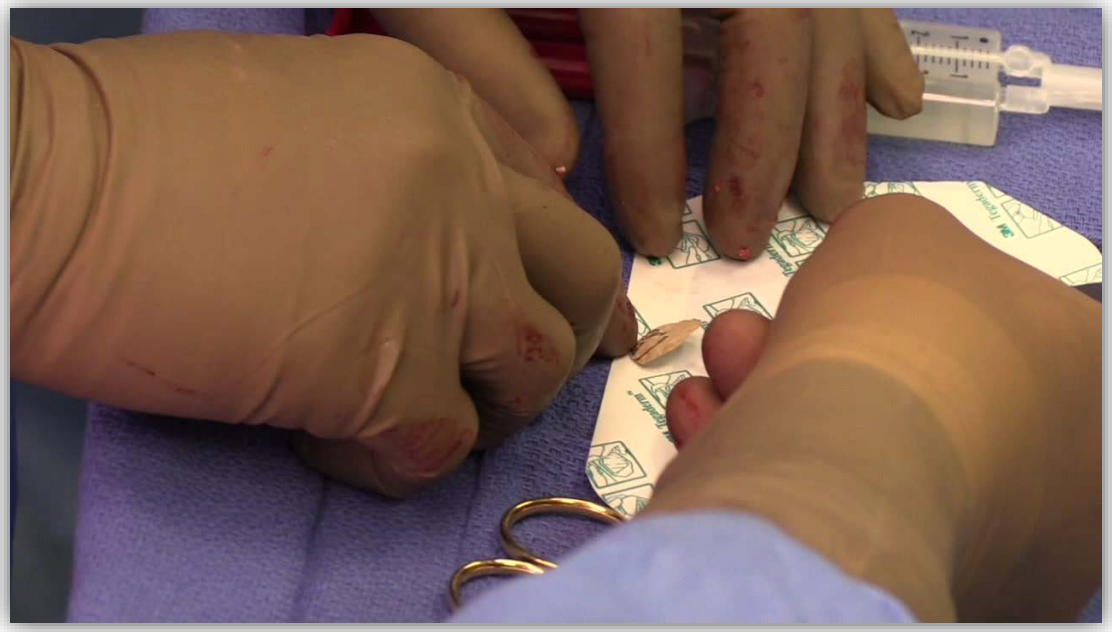
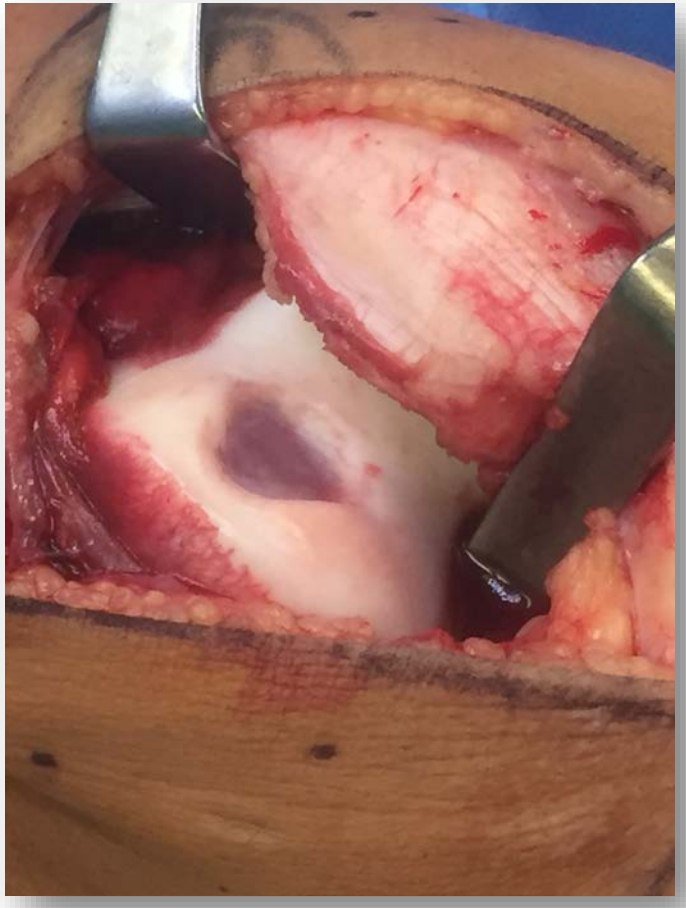
Right Knee MACI



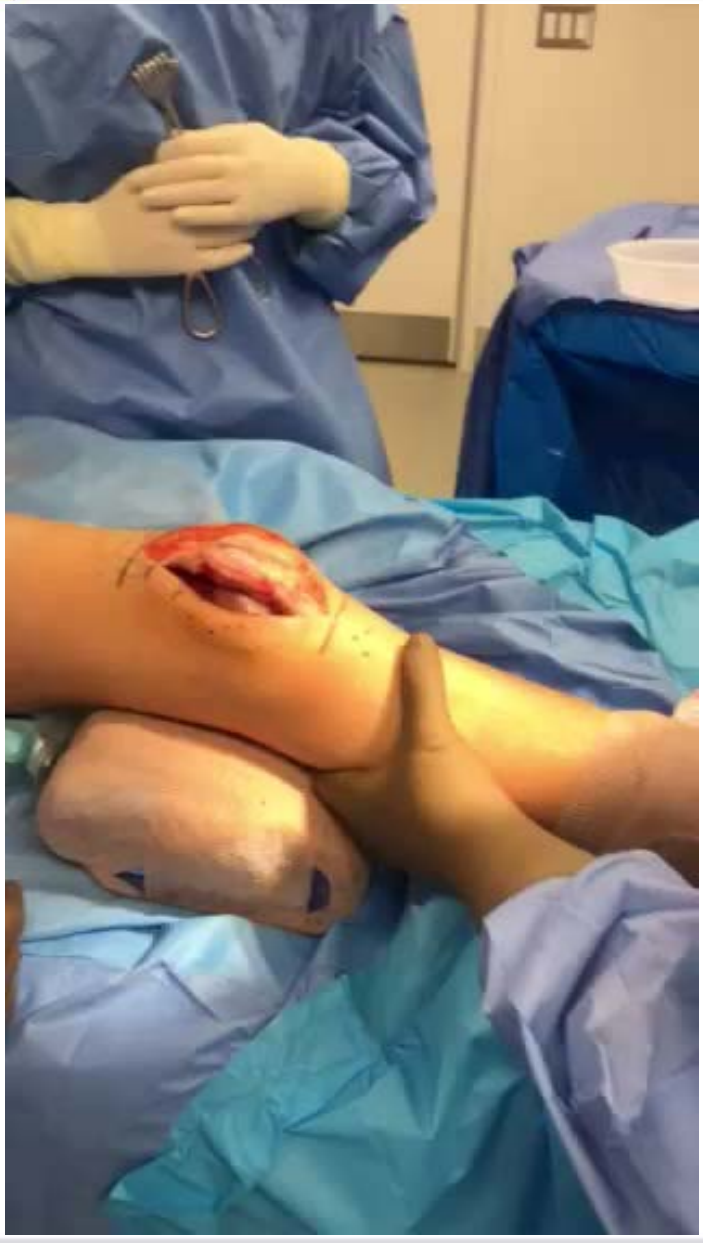


Right Knee MACI

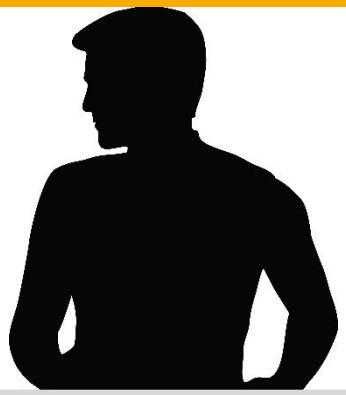




Right Knee MACI



Post-Operative Course



Patient Profile

Physical Exam and Imaging

Arthroscopy

Surgery

Follow-Up and Outcome

- Currently 6 months post-surgery
- Denies any operative site pain, swelling or mechanical symptoms
- Range of motion 0-140 degrees without pain → smooth
- Quadriceps strength and endurance improving
- Following MACI protocol under guidance of PT and athletic trainer
- Returning to office in 3 months
  - Objective quadriceps testing
  - Reevaluation of range of motion
  - Anticipated release back to athletics

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Benefits of MACI Compared to Traditional ACI

- Much faster procedure (no suturing!!) with smaller incision
  - Less post-operative pain/swelling
  - Faster return of range of motion (anecdotal)
- Can treat defects in areas where ACI would have been difficult to effectively sew in
- Not concerned about leakage
- Accelerated rehabilitation protocol

Thank You

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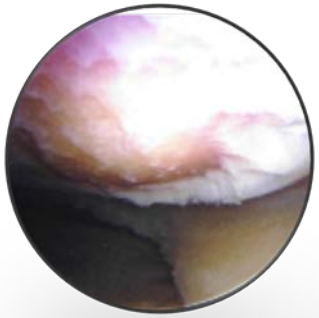
Cartilage Repair Algorithm & Competition

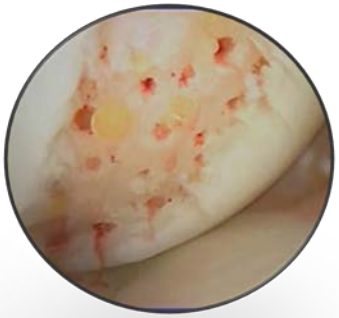
Sabrina Strickland, MD
Weill Cornell Medical College
Hospital for Special Surgery

Treatment Options for Focal Cartilage Defects

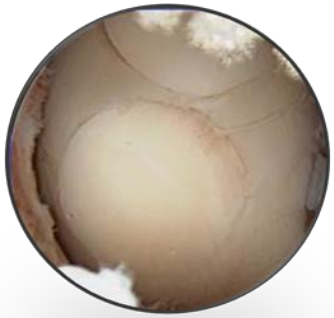
Debridement & Lavage



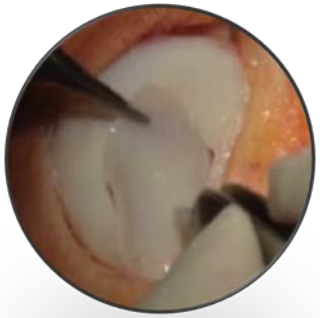
Microfracture & Augmentation



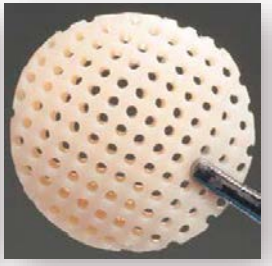
Osteochondral Auto & Allografts



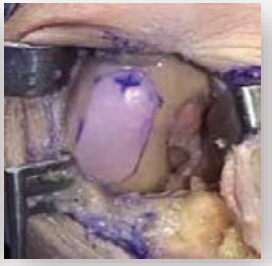
Cell Therapies



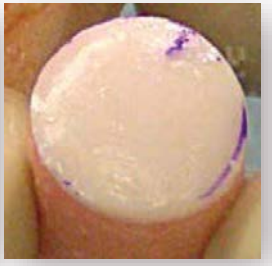
BioCartilage®



Cartiform®

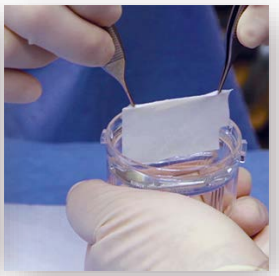


Bio-Uni Allograft Implant



Osteochondral allograft plug

DeNovo NT®



MACI®

Bentley G, et al. *Injury*. 2013;44(Suppl1):S3-S10. Image of debridement courtesy of Dr. Brian Cole; images of microfracture, osteochondral autograft, and osteochondral allogaft courtesy of Dr. Christian Lattermann; image of autologous chondrocyte implantation courtesy of Dr. Jack Farr.

Several Factors Should Be Considered When Developing an Individualized Treatment Plan[1,2]

Patient

- Age and weight*[3]
- Expectations[3]
- Compliance,[3] including rehabilitation[4]
- Functional level[3]
- Comorbidities[3]

Injury

- Chronicity of lesion*, size, and site[3]
- Quality of bone/type of lesion
- Underlying contributors to injury[4]
- Malalignment, ligament instability, meniscus deficiency[4]

* Obesity and previous knee injury has the highest association with lesion progression

1. Tetteh ES, et al. *J Orthop Sports Phys Ther*. 2012;42:243-253. **2.** Kane P, et al. *Phys Sportsmed*. 2013;41:75-86. **3**. Marcacci M, et al. *Injury*. 2013;44:S11-S15. **4.** Gomoll AH, et al. *J Bone Joint Surg Am*. 2010;92:2470-2490. Alentorn-Geli E. AJSM

An Additional Treatment Consideration Is the Complexity of the Chondral Defect

Simple

- Single unipolar
- Grade 3 or 4 lesion on the femur with grade ≤ 2 on the tibia or patella

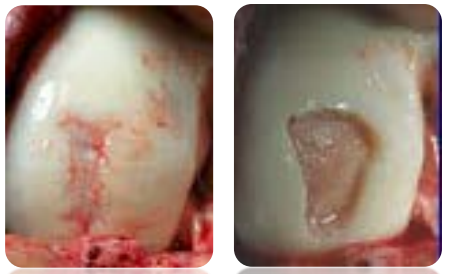
Complex

- Multifocal unipolar
- Grade 3 or 4 lesions on the femur, with concurrent HTO/TTO, OCD, unipolar lesions on the tibia or patella

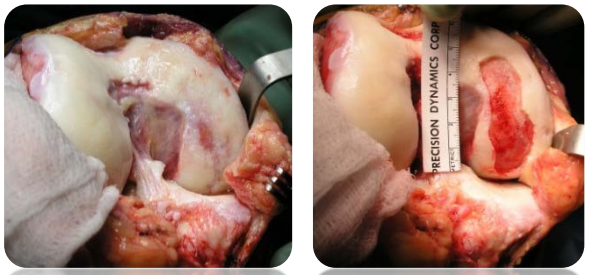
Salvage

- Bipolar focal lesions
- Radiographic joint space narrowing present
- Generalized chondromalacia ≥ grade 2

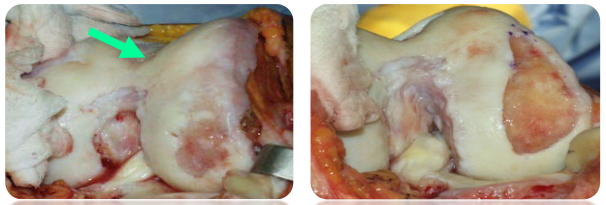
Simple Defects



Complex Defects



Salvage Defects



HTO: high tibial osteotomy; OCD: osteochondritis dissecans; TTO: triple tibial osteotomy. Images courtesy of Dr. Tom Minas.

Minas T, et al. *Clin Orthop Relat Res*. 2014;472:41-51.

Factors That Relate to My Patient Population

- Many acute injuries in athletes under 30
- Patella
  - 39 patients after initial dislocation
  - 95% articular cartilage injury, all patella, 31% LFC
    - 9 cracks alone
    - 72% had osteochondral defect
    - Avg size 16 x 12mm

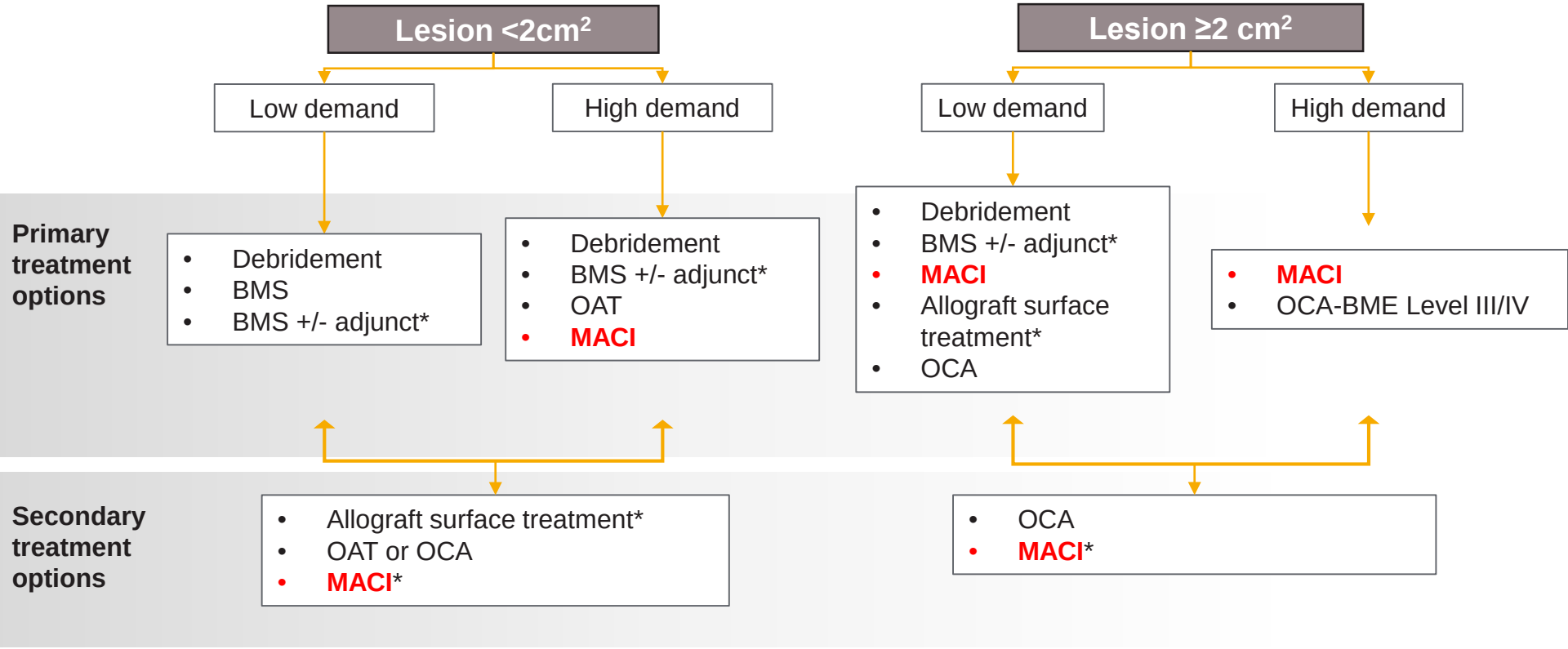
Nomura, et al, Arthroscopy 2003

- Patella injuries limit ability to climb stairs

Treatment for Articular Cartilage Defects in the Femoral Condyles

Criteria for Surgery

- Unacceptable pain and dysfunction
- Concomitant pathology considered (ligament insufficiency, meniscal deficiency, malalignment)
- Nonsurgical care unsuccessful (physical therapy, intra-articular injections)
- Risk-benefit ratio (Does the tx provide a meaningful difference to the patient?)



ACI, autologous chondrocyte implantation; BMS, bone marrow stimulation; OAT, osteochondral autograft; OCA, osteochondral allograft
*Subchondral bone normal or nearly normal.

RED BOLD: Evidence Based Outcomes with Level I and II Data

Derived From Source: International Cartilage Repair Society (ICRS Regulatory Committee 2017 FDA Presentation)

Lucy Oliver-Welsh et al. Trending in Orthopedics. Nov/Dec 2016 Vol 39 Number 6

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Patient Case

Sabrina Strickland, MD
Weill Cornell Medical College
Hospital for Special Surgery

Patient Case

Patient Profile

Physical Exam and Imaging

Arthroscopy

Surgery

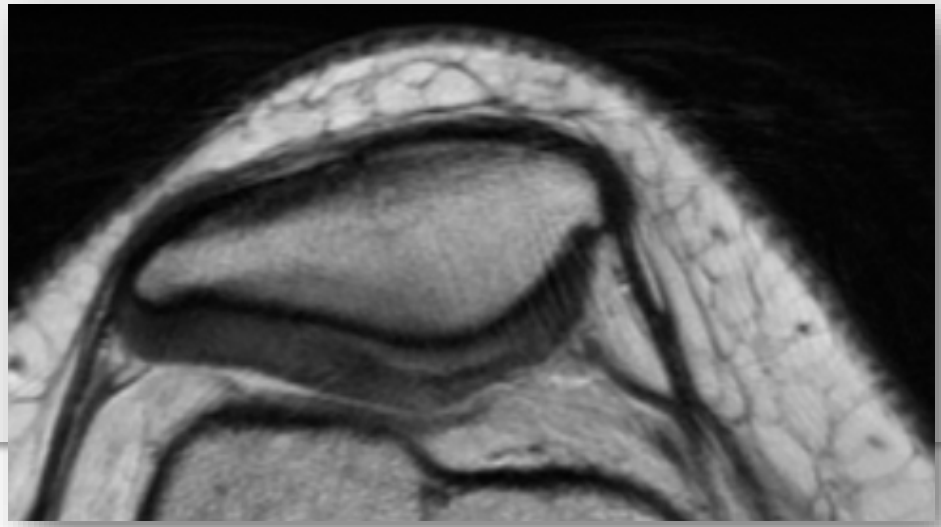
Follow-Up and Outcome

- 18 Year Old Female
- High School Lacrosse player
- 18 months of knee pain
- Pain with stairs, sports, prolonged sitting
- No trauma
- Patient's expectations and goals: to return to full activity, play lacrosse, and live pain free

Patient Case

- Patient Profile
- **Physical Exam and Imaging**
- Arthroscopy
- Surgery
- Follow-Up and Outcome

- MRI full thickness
- Patella
- Mild swelling
- Range of motion: nearly full
- Prior treatments: physical therapy, hyaluronic acid injections
- Comorbidities: none



Patient Case

Patient Profile

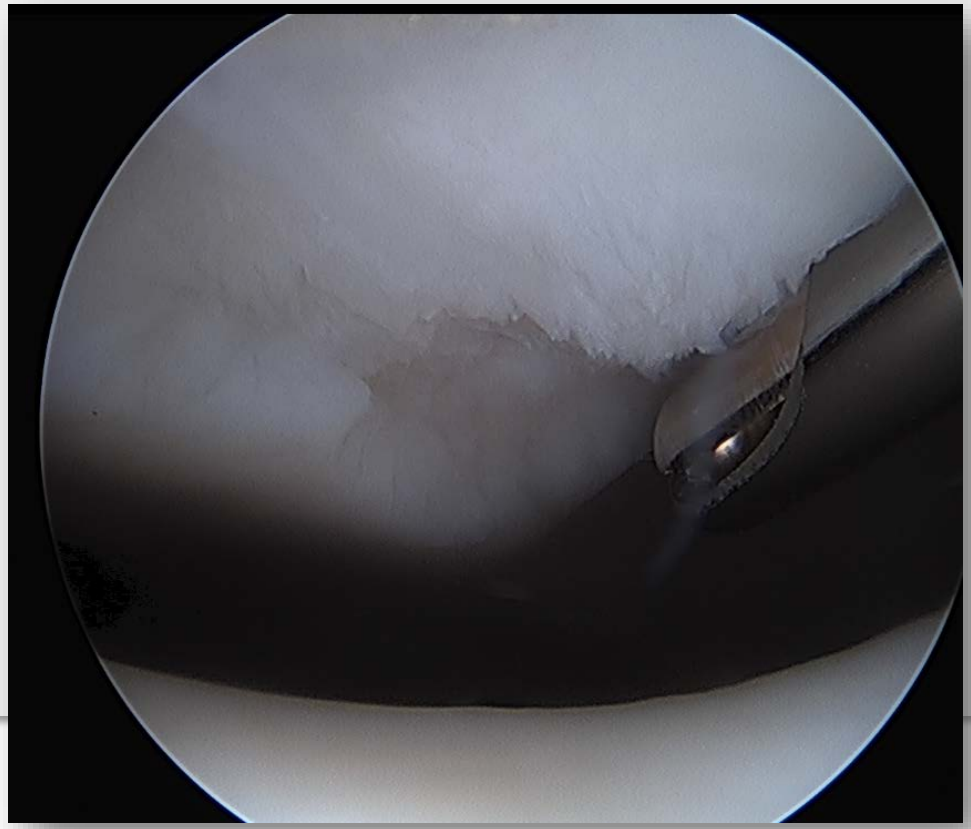
Physical Exam and Imaging

Arthroscopy

Surgery

Follow-Up and Outcome

- Surface area of the lesion is 2 x 2 cm
- Full thickness cartilage defect
- Cartilage biopsy



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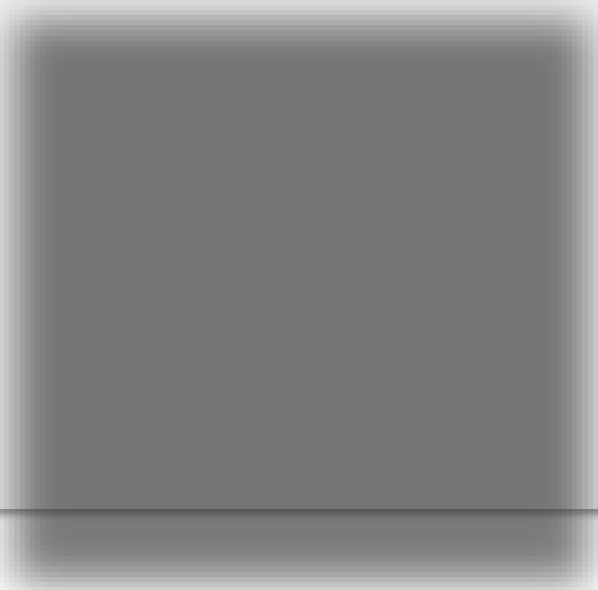
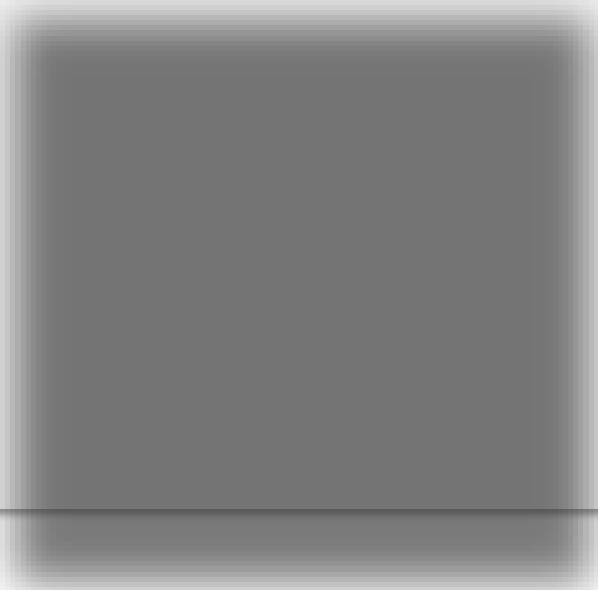
Patient Case

- Patient Profile
- Physical Exam and Imaging
- Arthroscopy
- **Surgery**
- Follow-Up and Outcome

- Open debridement of the lesion
- Preparation of graft to size
- Tibial tubercle osteotomy (protect graft-unload lateral aspect of patella)





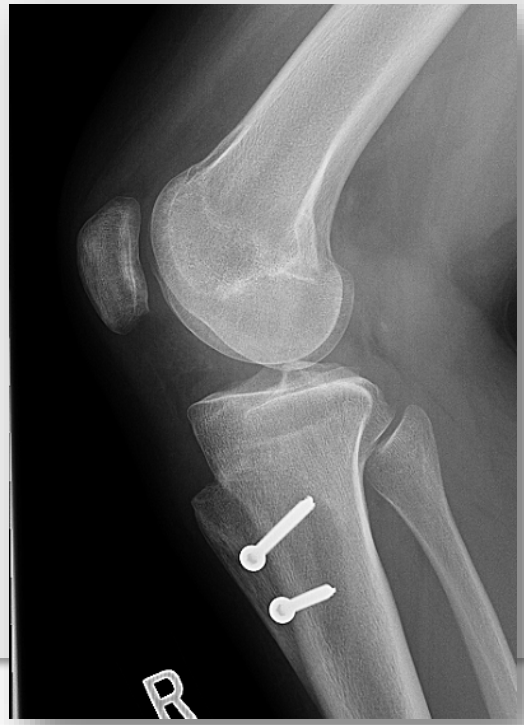
VERICEL

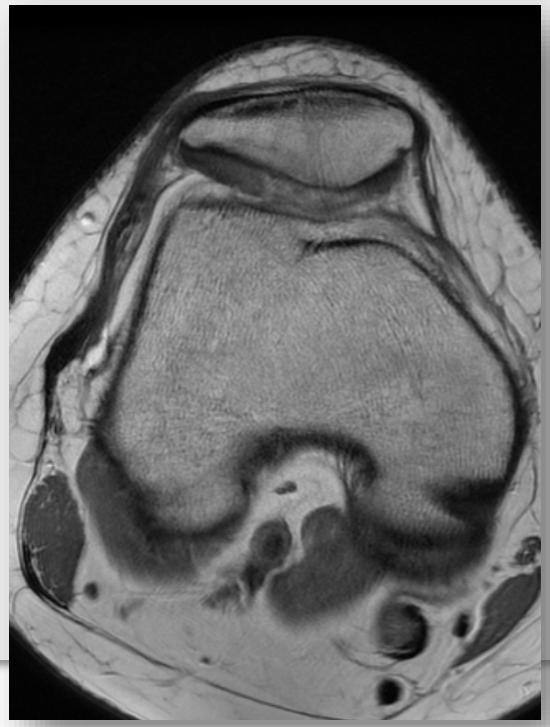
maci autologous cultured chondrocytes on porcine collagen membrane

Patient Case

- Patient Profile
- Physical Exam and Imaging
- Arthroscopy
- **Surgery**
- Follow-Up and Outcome

- Open debridement of the lesion
- Preparation of graft to size
- Tibial tubercle osteotomy (protect graft-unload lateral aspect of patella)





VERICEL

maci autologous cultured chondrocytes on porcine collagen membrane

Patient Case

Patient Profile

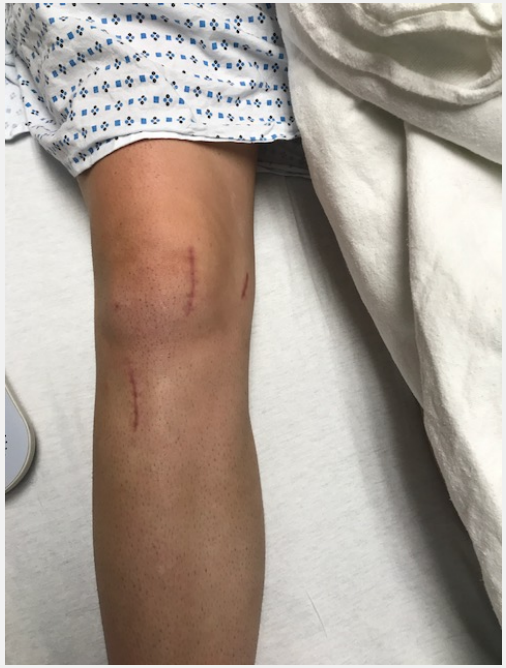
Physical Exam and Imaging

Arthroscopy

Surgery

Follow-Up and Outcome

- Physical therapy began at 4 weeks, continuous passive motion machine prior to that
- Pain level: narcotics first 3 days, then Tylenol
- Weight bearing: non-weight bearing 4 weeks to protect osteotomy
- Range of motion
- Strength: begin with quad contraction and stim, progress at 4 weeks
- Impact loading: start at 6 weeks but contralateral side done at 3 months
- Return to activities: 6 months now, starting to practice, not cutting yet



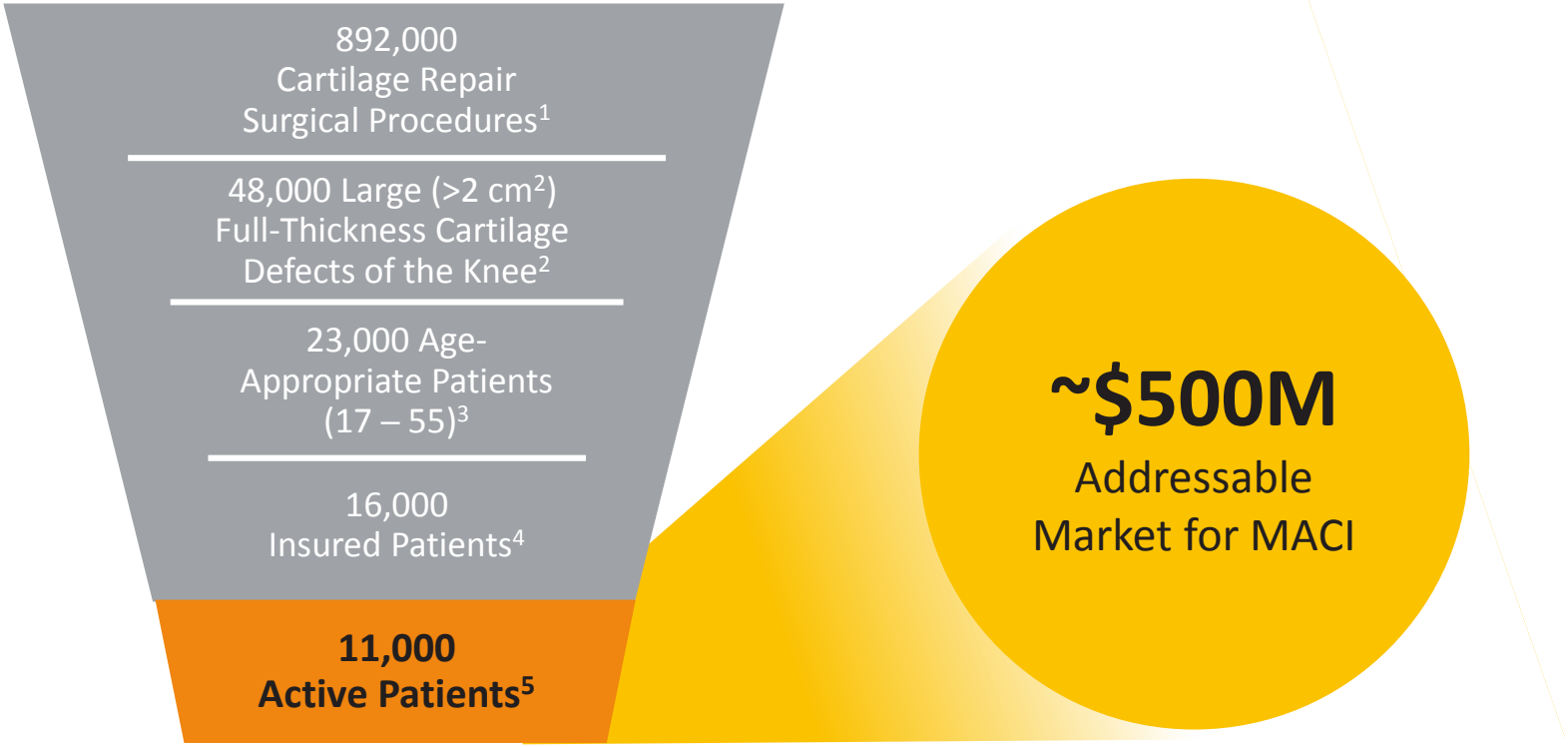
Thank You

maci
autologous cultured chondrocytes on porcine collagen membrane

MACI Commercial Update

Large Addressable Cartilage Repair Market for MACI

Estimated Annual Addressable Patient Population (U.S.)

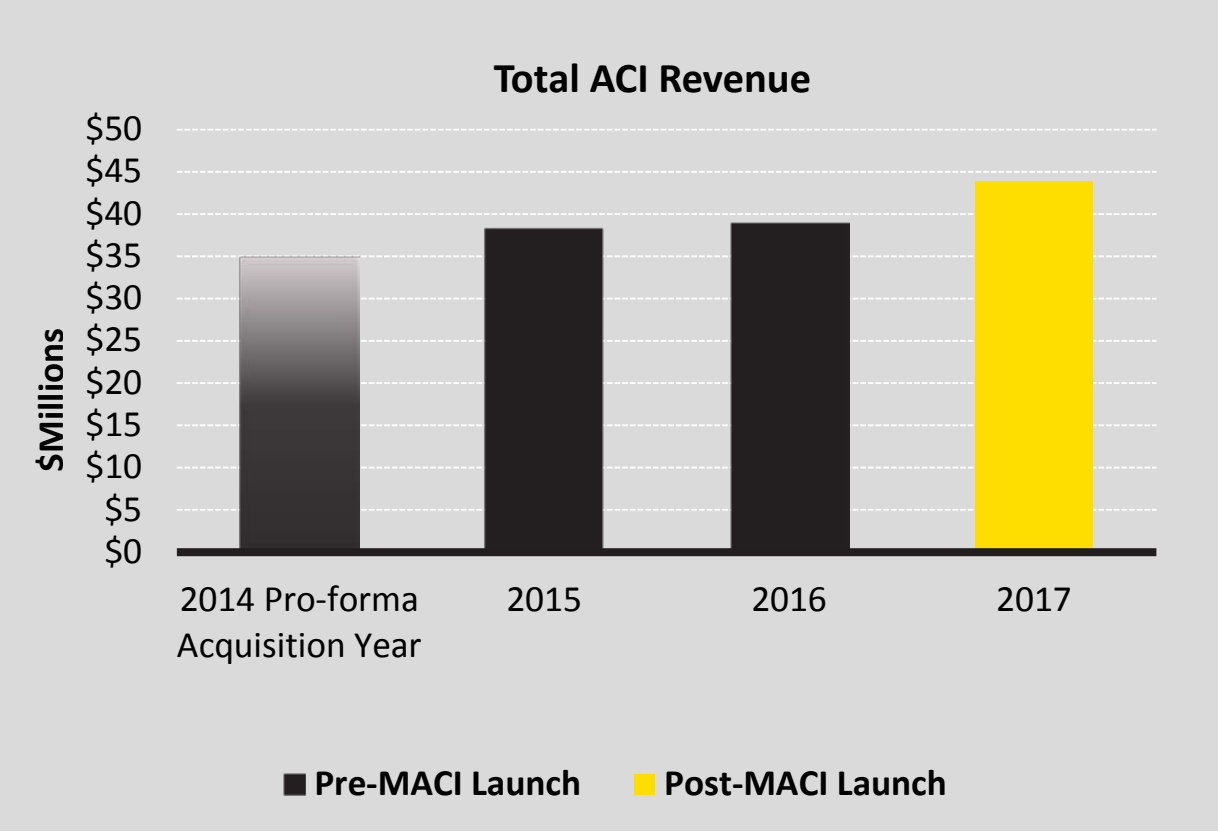


1U.S. MARKETS FOR SPORTS MEDICINE PRODUCTS; MedTech Insight, Report #A332, Oct 2014; 2Hjelle et al. Arthroscopy. 2002,18(7):730–4; Aroen et al. Am J Sports Med. 2004,32(1):211-215; Figueroa et al. Arthroscopy, 2007,23(3):312-315; Curl et al. Arthroscopy. 1997, 13(4): 456-460; Flanigan et al. Med Sci Sports Exerc. 2010, 42(10): 1795-801.; 3U.S. Census, Kaiser Family Foundation; 4http://www.cdc.gov/nchs/fastats/health-insurance.htm; 5http://stateofobesity.org/obesity-rates-trends-overview/; 6SmartTrak BioMedGPS US Cartilage Replacement Market 2014-2019E, Procedure Volumes; Vericel Market Research

VERICEL

maci autologous cultured chondrocytes on porcine collagen membrane

Significant Growth In ACI Revenue After MACI Launch



2017 REVENUE = $43.9M

13% growth in 2017 with 19% and 26% growth quarter over quarter in Q3 and Q4 2017, respectively

Strategic Imperatives

IMPERATIVE
Establish MACI as premium cartilage repair brand
Increase number of surgeons utilizing MACI
Ease and expand MACI access
Drive MACI patient awareness through education and brand preference

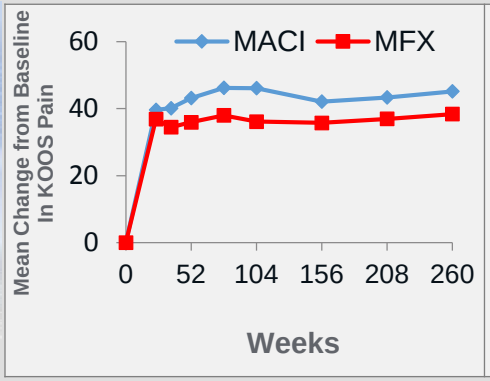
MACI 2017 Launch Year in Review

IMPERATIVE	LAUNCH ASSESSMENT
 Establish MACI as premium cartilage repair brand	• Market Research confirms positive physician perception and future use • Quicker rehabilitation being observed through growing patient experience
 Increase number of surgeons utilizing MACI	• >600 surgeons trained • Q2 2017 sales force expansion demonstrated impact by Q4 2017
 Ease and expand MACI access	• Carticel removed from the market six months post MACI approval • Transitioned to best in class case management services • Nine months post launch all top 20 plans provide access to MACI
 Drive MACI patient awareness through education and brand preference	• Early online promotions demonstrate message resonates with target patients

Strategic Imperatives

IMPERATIVE

Establish MACI as premium cartilage repair brand



Surgeon

MACI is a simplified ACI procedure that allows me to restore the active lifestyle my patients enjoy

Patient

MACI uses my own cells to restore the active lifestyle I enjoy

MACI is the durable treatment option that repairs cartilage defects using the patient's own cells

Strategic Imperatives

IMPERATIVE

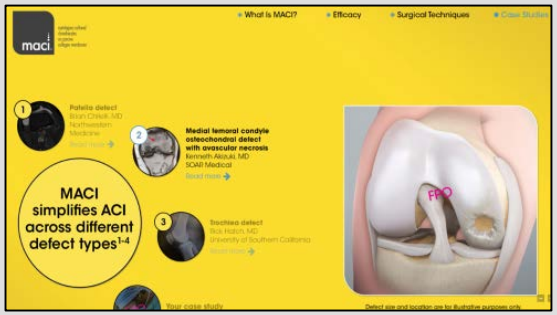
Increase number of surgeons utilizing MACI

	2012-2016 Carticel *(21 Representatives)*	2017 MACI Launch *(28 Representatives)*	2018 MACI *(40 Representatives)*
	Low single digit decline on all measures except for flat conversion ratio	Achieved double digit growth on key metrics, led by a 33% increase in biopsies while conversion ratio remained steady	KPIs compel sales force expansion to meet growing demand of an expanding surgeon and patient population
COVERAGE OF SURGEON TARGETS (%)	60%	75%	90%

Strategic Imperatives

IMPERATIVE

Increase number of surgeons utilizing MACI



Digital Toolbox to provide sales rep compendium of options including interactive case studies

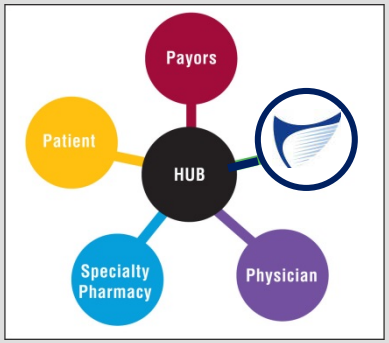
Multiple surgeon training options

Customized instrument sets to streamline MACI procedure

Strategic Imperatives

IMPERATIVE

Ease and expand MACI access

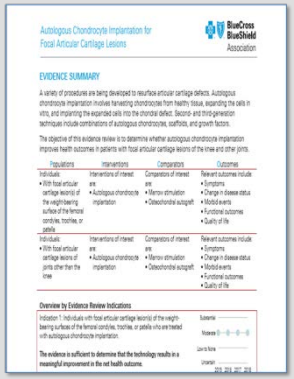


INDICATION

MACI® (autologous cultured chondrocytes on porcine collagen membrane) is an autologous cellularized scaffold product that is indicated for the repair of single or multiple symptomatic, full-thickness cartilage defects of the adult knee, with or without bone involvement.

MACI is intended for autologous use and must only be administered to the patient for whom it was manufactured. The implantation of MACI is to be performed via an arthrotomy to the knee joint under sterile conditions.

The amount of MACI administered is dependent upon the size (surface in cm^2) of the cartilage defect. The implantation membrane is trimmed by the treating surgeon to the size and shape of the defect, to ensure the damaged area is completely covered, and implanted cell-side down.


Autologous Chondrocyte Implantation for Focal Articular Cartilage Lesions

BlueCross BlueShield Association

EVIDENCE SUMMARY

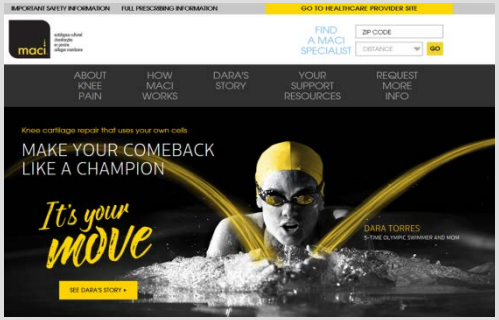
Expanding dedicated case management service to meet increased physician, patient, and sales force demand

Focused on adding patella to medical policies based on MACI label

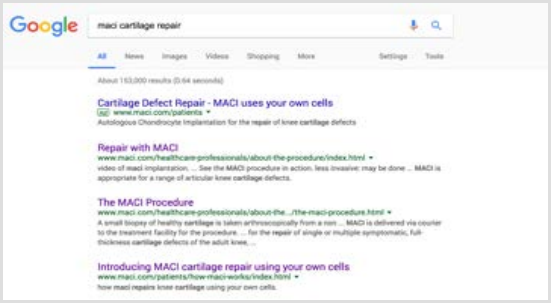
Strategic Imperatives

IMPERATIVE

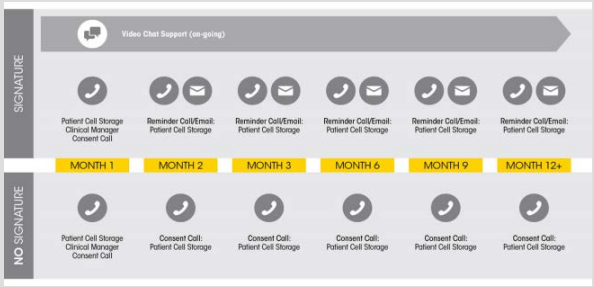
Drive MACI patient awareness through education and brand preference



Celebrity campaign launch with Dara Torres



Targeted online advertising to drive potential patients to MACI.com



Launching ongoing patient support program to increase long-term conversion rates

Dara Torres

maci®

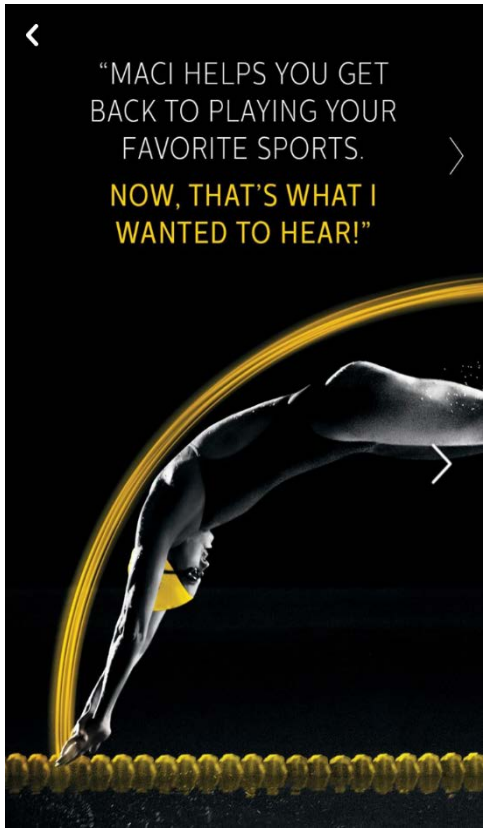
autologous cultured
chondrocytes
on porcine
collagen membrane

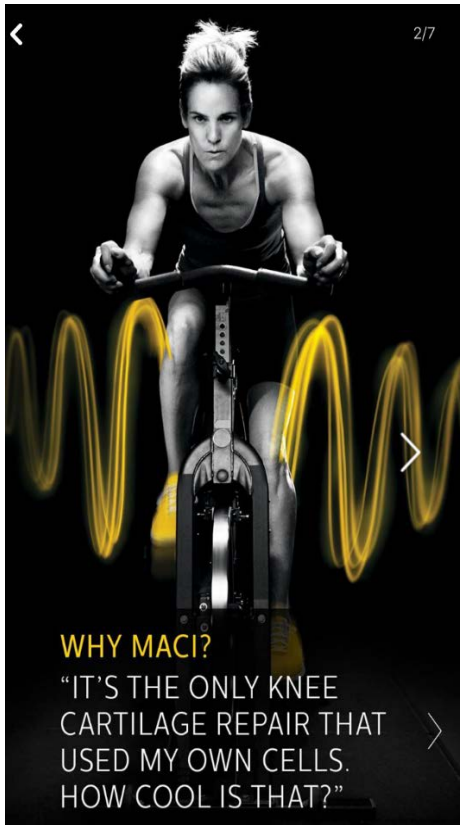
VERICEL

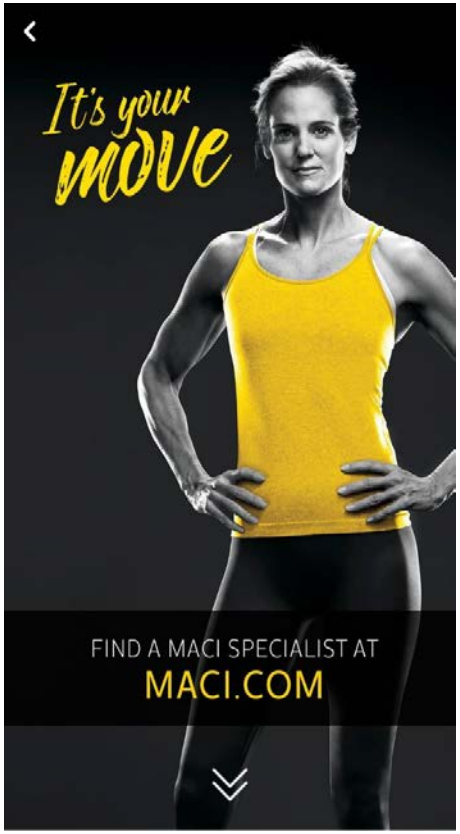
Life Before Cartilage Injury

- Full-time motivational speaker, TV personality and mom
- Five-time Olympic swimmer
- 12 time medalist, including four gold medals

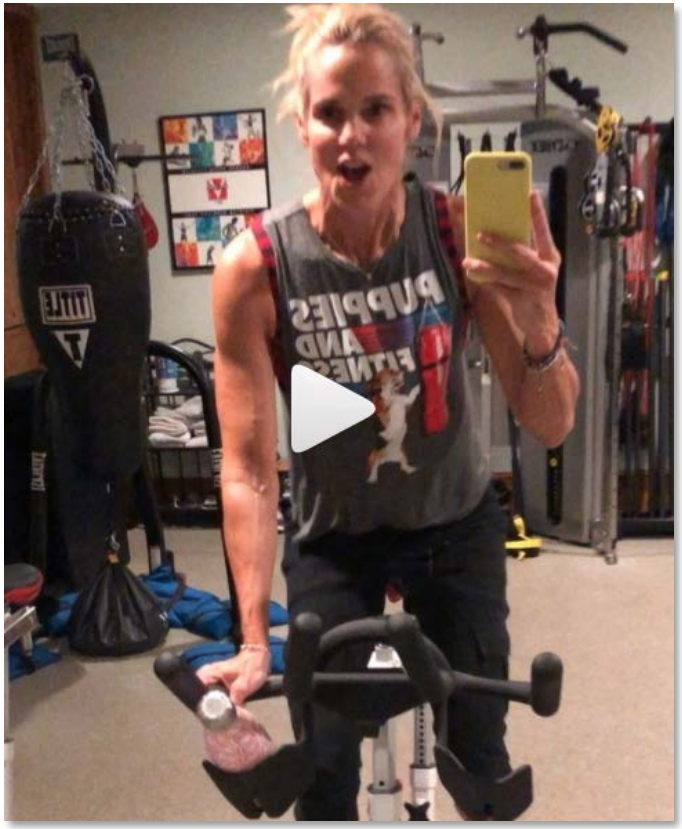
Finding the Right Treatment With MACI







What MACI Can Do For Patients With Knee Cartilage Damage



Images: Dara Torres Instagram account

maci
autologous cultured chondrocytes on porcine collagen membrane

FIND A MACI SPECIALIST
ZIP CODE
DISTANCE
GO

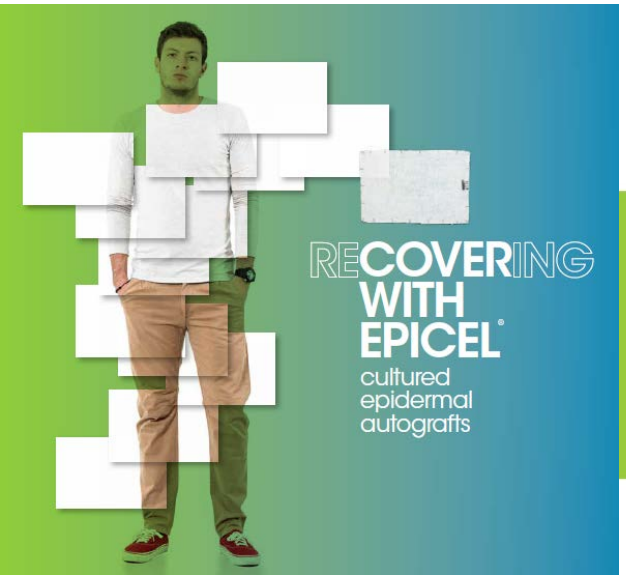
Knee cartilage repair that uses your own cells

MAKE YOUR COMEBACK LIKE A CHAMPION

It's your move

DARA TORRES
5-TIME OLYMPIC SWIMMER AND MOM

SEE DARA'S STORY ▸



Cultured Epidermal Autografts for Patients With Deep Dermal or Full-Thickness Burns

Epicel® (cultured epidermal autografts)

Humanitarian Device

Epicel is approved as a Humanitarian Use Device for use in adult and pediatric patients who have deep dermal or full thickness burns comprising a total body surface area greater than or equal to 30%. It may be used in conjunction with split-thickness autografts, or alone in patients for whom split-thickness autografts may not be an option due to the severity and extent of their burns. The effectiveness of the device for this use has not be demonstrated.

See Directions for Use and Patient Information for Epicel.

Impact of Deep Burns

486,000

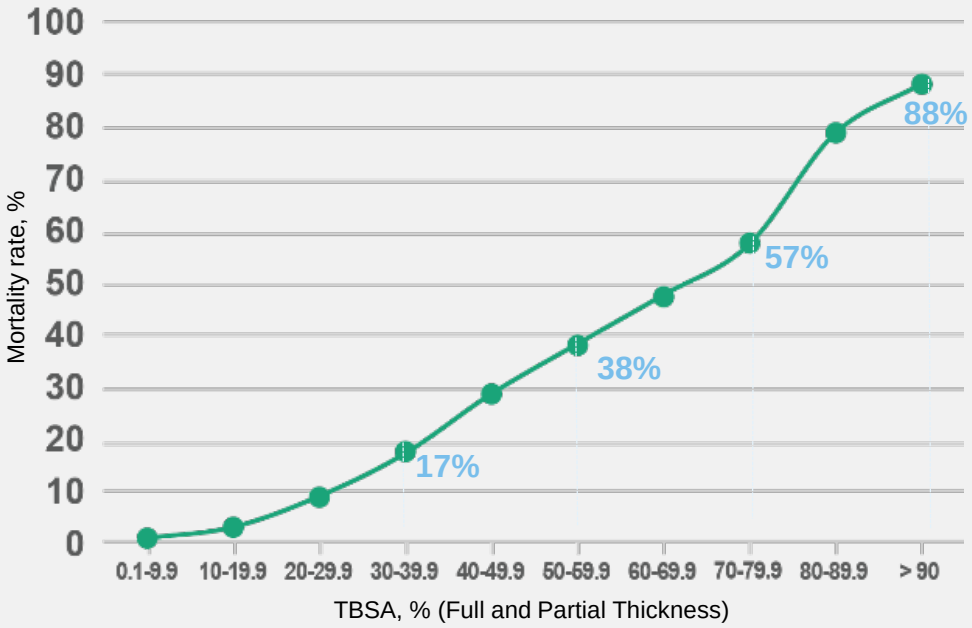
In the United States in 2016, an estimated 486,000 burn injuries required medical treatment[1]

40,000

40,000 required hospitalizations, including 30,000 at hospital burn centers[1]

Among patients treated at US burn centers between 2006-2015, approximately 5% had burns ≥30% total body surface area (TBSA)[2]

Mortality Increases With Burn Size[2]

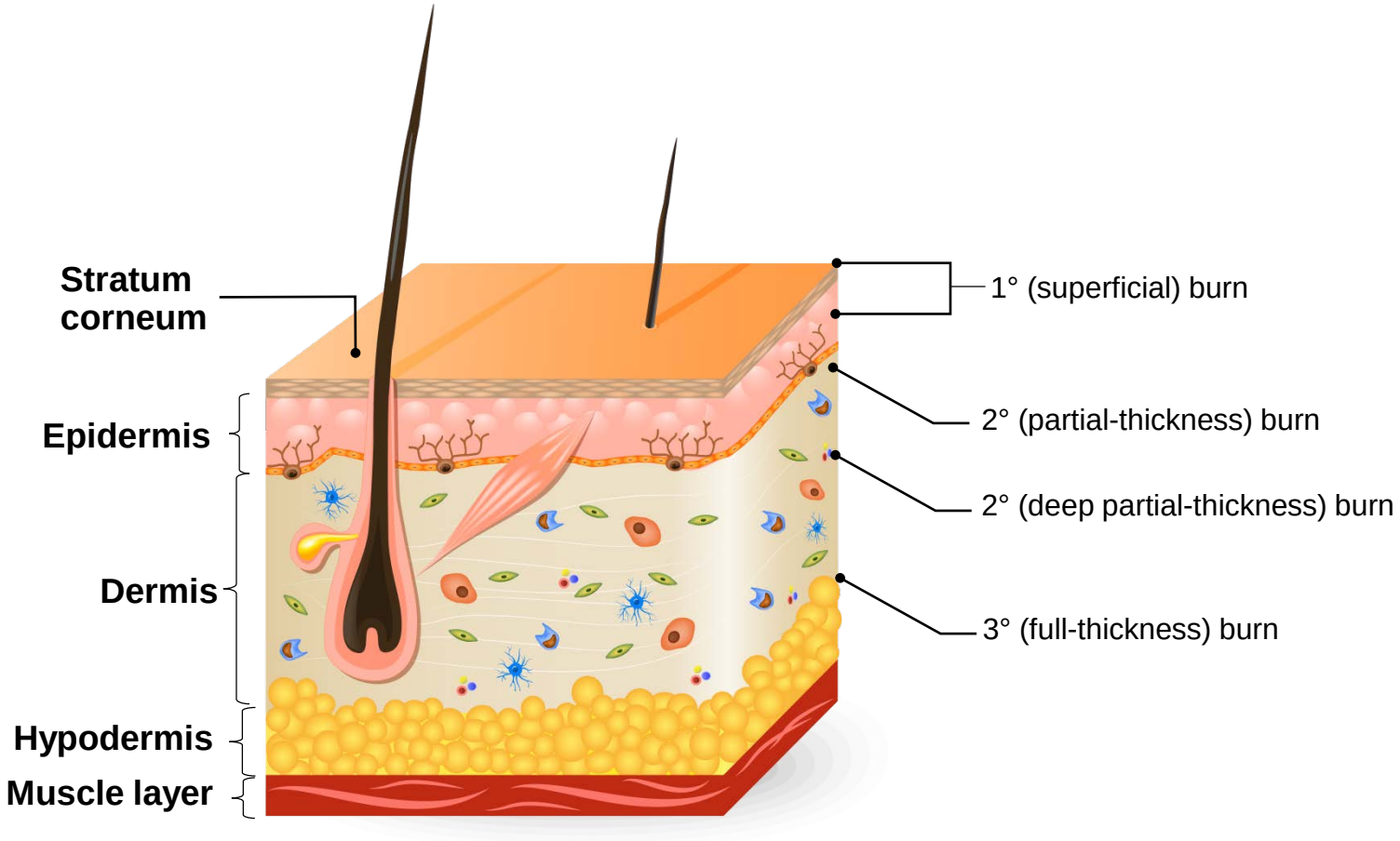


~36% Mortality rate for patients with burns ≥30% TBSA

1. American Burn Association. Burn Incidence Fact Sheet. http://www.ameriburn.org/resources_factsheet.php. Accessed January 6, 2017.
2. American Burn Association. 2016 National Burn Repository. http://www.ameriburn.org/2016%20ABA%20Full.pdf. Accessed January 6, 2017.

Burns

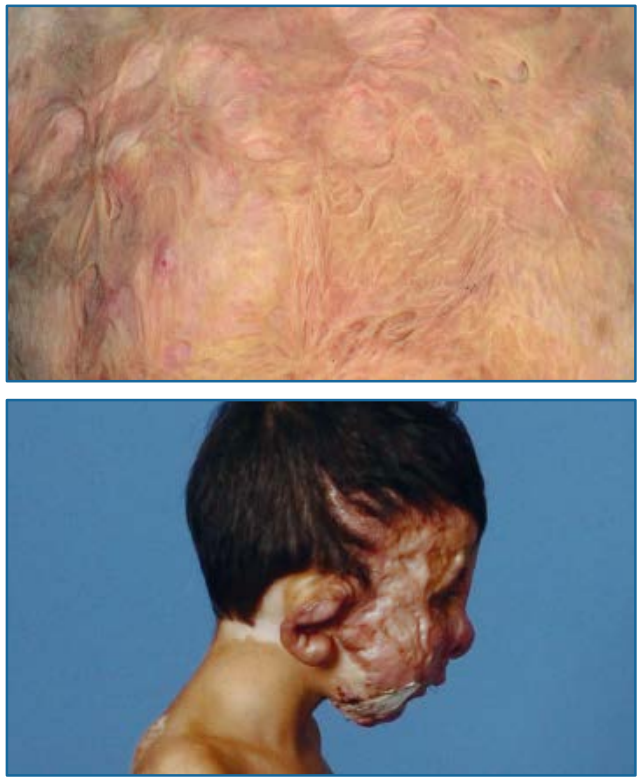
- Full-thickness burns destroy all viable tissue through the dermis
- Healing is only practical from the edge or through grafting



Sterling JP, et al. Management of the Burn Wound. In: *Trauma and Thermal Injury.* 2010;1-13.

The Challenge of Burn Therapy

Examples of post-burn scarring



From: Finnerty CC, et al. *Lancet. 2016*;388(10052):1427-1436.

- Natural wound repair mechanisms are designed for speed[1]
- As such, they are best at repairing small partial- or full-thickness wounds[1]
- Large wounds render the victim vulnerable to infection, desiccation, and disabling scars[2,3]

1. Church D, et al. *Clinc Microbiol Rev.* 2006;19(2):403-434.
2. DeSanti L. *Adv Skin Wound Care.* 2005;18(6):323-332.
3. Finnerty CC, et al. *Lancet. 2016*;388(10052):1427-1436.

Surgical Management

Deep Dermal or Full-Thickness Burns

For patients with limited donor skin availability

Burn debridement and excision (2-7 days post-burn)

Early excision improves patient survival

Temporary wound coverage

Options include cadaver allograft, skin xenograft, biosynthetic dressing

Permanent wound coverage

Full-thickness or split-thickness autograft with or without acellular human dermal allograft or dermal regenerative template

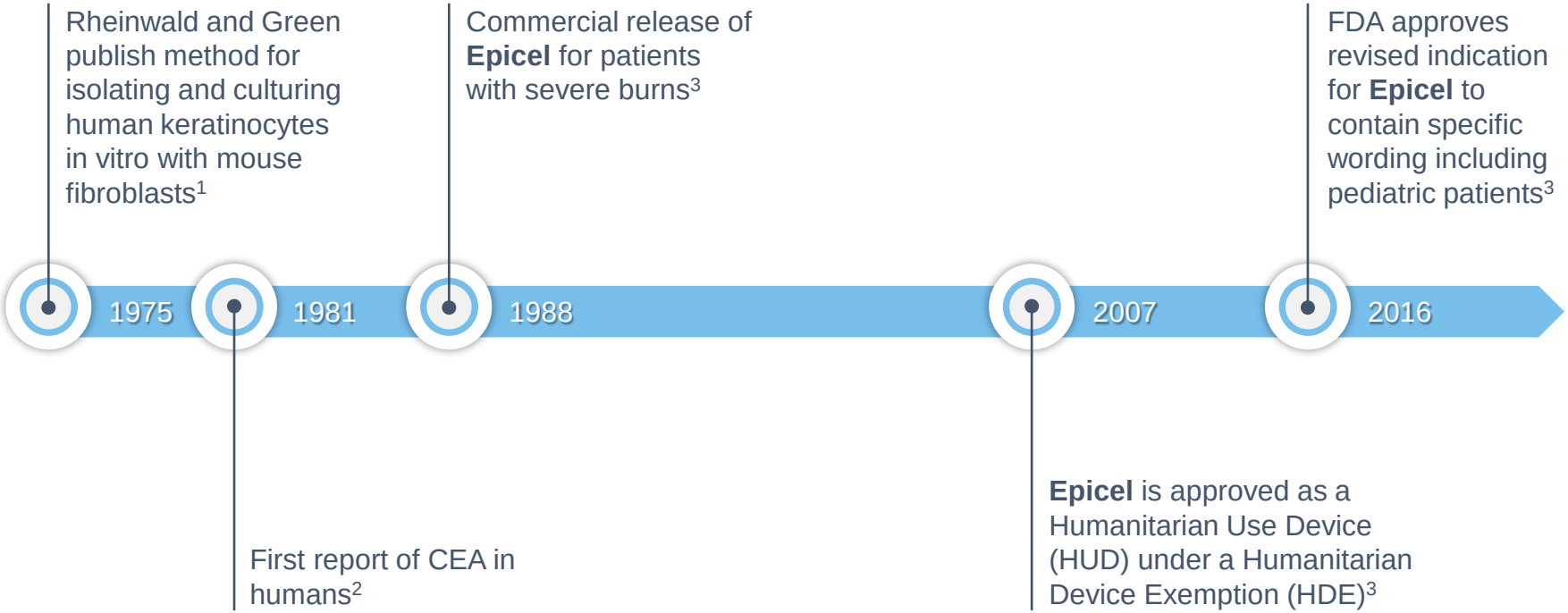
If sufficient donor skin is available

Epicel (cultured epidermal autograft)

Placed on dermis generated from allograft or dermal template

Epicel Timeline

Historical Timeline



1. Rheinwald J, Green H. *Cell*. 1975;6(3):331-334.
2. O'Connor NE, et al. *Lancet*. 1981;317(8211):75-78.
3. Epicel press release. https://www.sec.gov/Archives/edgar/data/887359/000110465916098630/a16-4940_1ex99d1.htm. Accessed February 2, 2017.

Introduction to Epicel

- For the treatment of deep dermal or full thickness burns comprising a total body surface area (TBSA) ≥ 30%
- May be used in conjunction with split-thickness autografts or alone

Methodology

1. Two full-thickness biopsies collected from healthy skin
2. Biopsies undergo enzymatic processing and breakdown
3. Autologous keratinocytes are inoculated onto flasks of irradiated 3T3 cells and expanded into confluent cell sheets
4. Epicel grafts are assembled and attached to a petrolatum gauze backing
5. Epicel delivered to operating room for placement

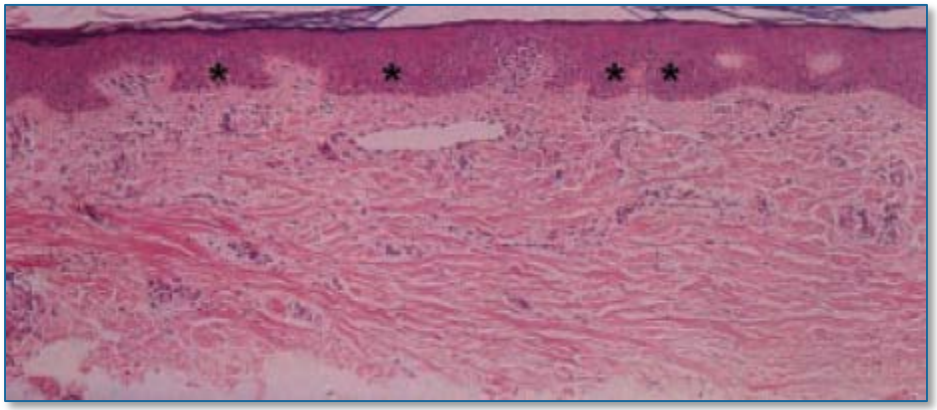
Differentiation and Stratification of Cultured Keratinocytes

Autologous keratinocytes are grown under conditions that maximize growth[1]

As cells reach confluence, they undergo partial differentiation and stratification[1]

The process results in the formation of an intact sheet that is 2-8 cell layers thick[2]

Regenerated epidermis with regularly spaced rete ridges(*)

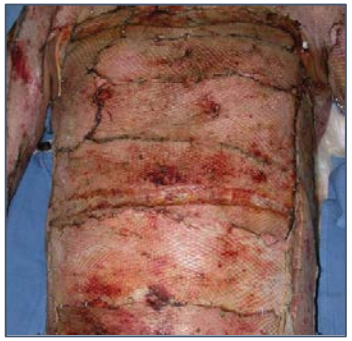


From Compton CC et al. *Lab Investigation*. 1989;60:600-612.

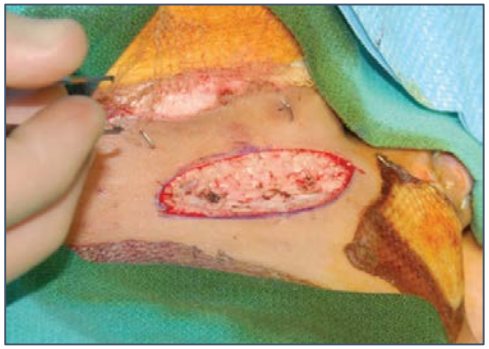
1. Atiyah B and Costagliola M. *Burns*. 2007;33:405-413.
2. Epicel [Directions for Use]. Cambridge, MA: Vericel Corporation; 2016.

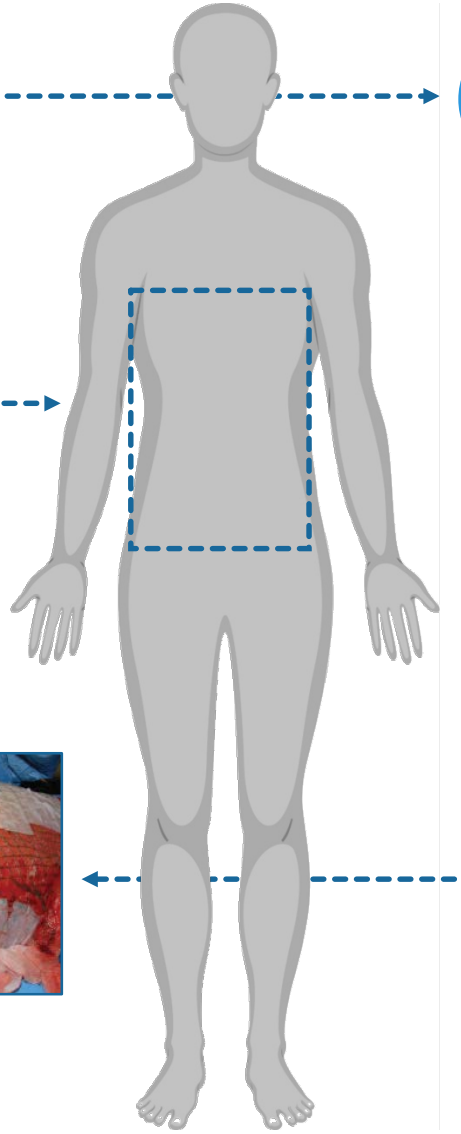
The Autografting Process

1. Excise wound and apply temporary coverage

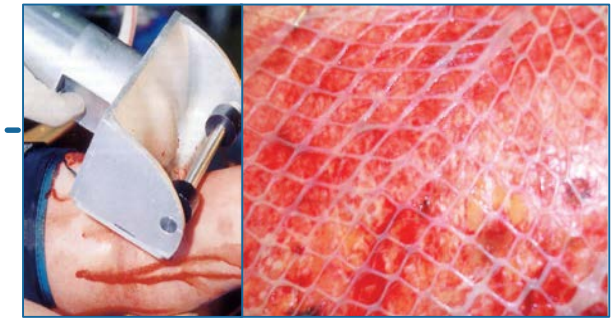


2. Collect biopsy for Epicel from healthy skin

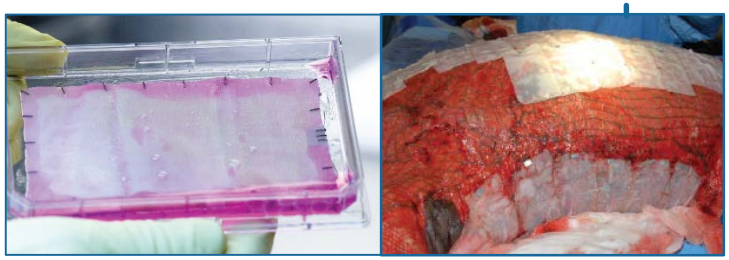




3. Collect autografts and mesh



4. Apply Epicel over widely meshed autograft



Post-Operative Treatment

During the post-operative period:

- Avoid mechanical trauma and friction
- Do not disrupt sterile nylon net or Epicel
- Avoid frequent irrigation

1x per day

Change outer dressing (down to nylon mesh) at least 1x per day

- During dressing changes leave grafted areas open to air ≥4 hours/day
- Use topical (wring-out soaks) & systemic antibiotics as directed by cultures

Takedown

Seven to ten days after grafting, evaluate graft readiness for takedown

- In test area, remove sterile nylon net and tease gauze from the wound bed
- If needed: soak in saline to facilitate removal
- If gauze is firmly adhered or epithelium lifts, rewrap and attempt removal in several days

Long-term care

After skin integrity is established, grafts are still fragile

- Grafted areas are exposed to air (≥4 hours) and dressing changed daily
- Perform gentile active/passive ROM, careful to avoid shear
- Gentle lotion and showering is permitted once Epicel is confluent and toughened (typically 21 days +)
- Pressure garments as directed by MD (typical 6 weeks post grafting)

Epicel [Directions for Use]. Cambridge, MA: Vericel Corporation; 2016.

Epicel Clinical Experience

The probable benefit of Epicel, mainly related to survival, was demonstrated through the following:

Clinical database used to support the original Epicel HDE application[1]

- Consisted of 552 patients, including 205 ≤21 years of age, treated with Epicel from 1989-1996

Epicel Medical Device Tracker registry[1]

- Consisted of 402 patients, including 120 pediatric patients, treated with Epicel from 2007-2015[2]

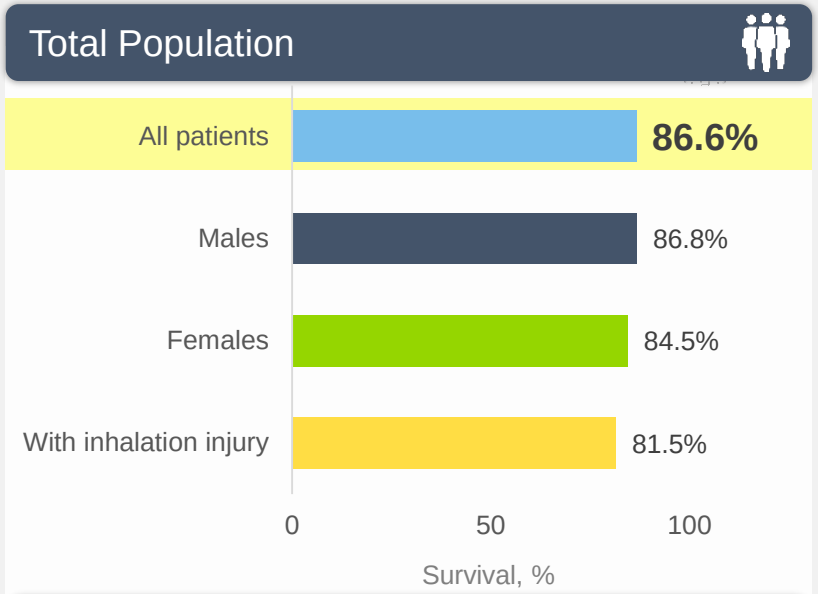
A randomized, controlled, independent, physician-sponsored study of severe burn patients[2]

- Compared outcomes for patients treated with Epicel (n=20) vs standard care (n=24)

1. Epicel [Directions for Use]. Cambridge, MA: Vericel Corporation; 2016.
2. Munster AM. *Ann Surg.* 1996;224(3):372-375.

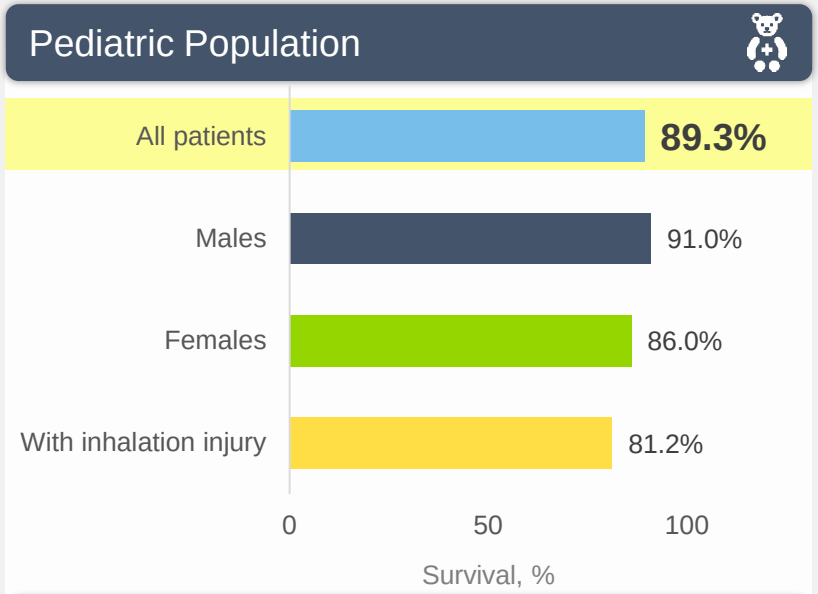
Epicel Database 1989-1996

Survival at 3 Months Post-Surgery



Among patients who survived:

- Mean TBSA was 67.6 ± 17.1%
- Mean TBSA with third-degree burns was 54.4 ± 20.9%



Among pediatric patients who survived:

- Mean TBSA was 67.5 ± 17.0%
- Mean TBSA with third-degree burns was 55.8 ± 21.0%

Epicel [Directions for Use]. Cambridge, MA: Vericel Corporation; 2016.

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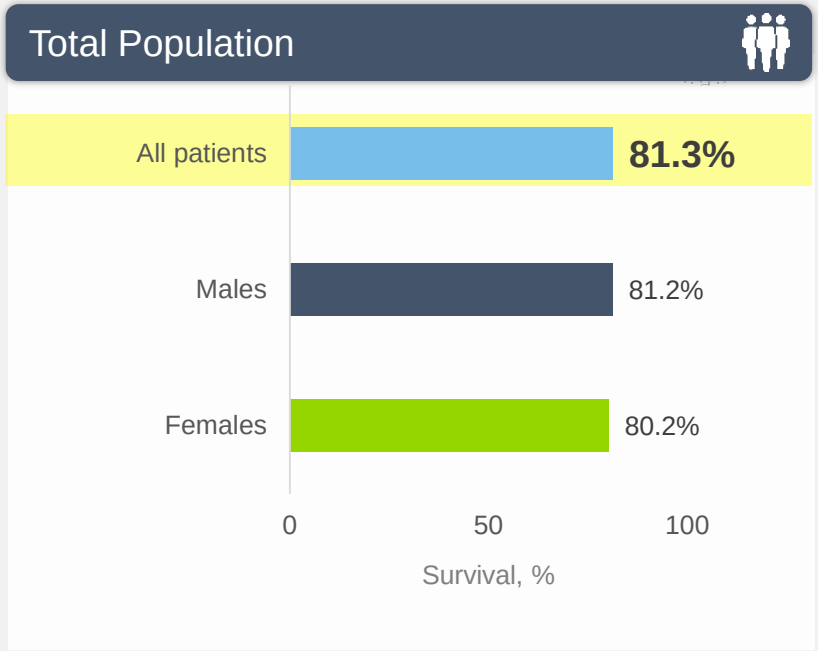
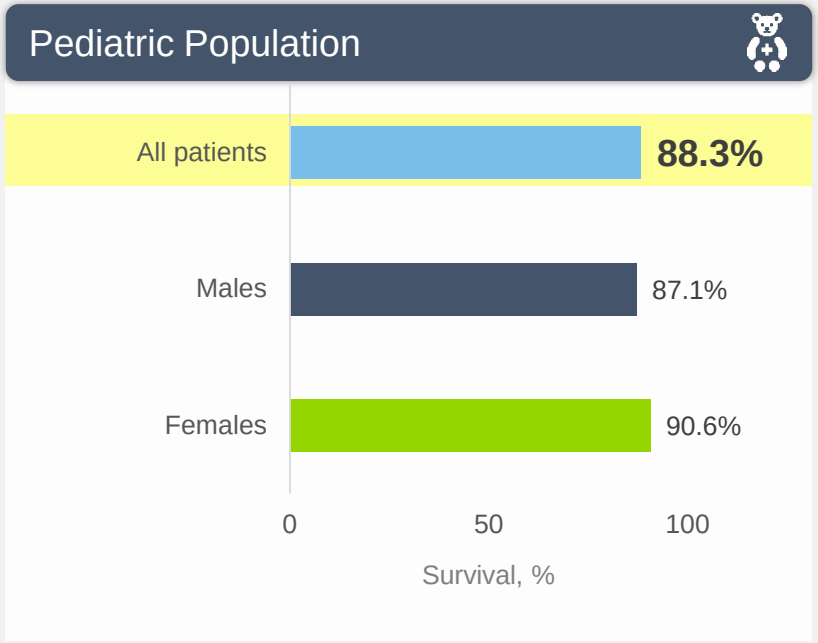
Epicel Tracking Registry 2007-2015

Survival Rate





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Epicel Medical Device Tracker registry[1]

- Consisted of 402 patients, including 120 pediatric patients, treated with Epicel from 2007-2015[2]

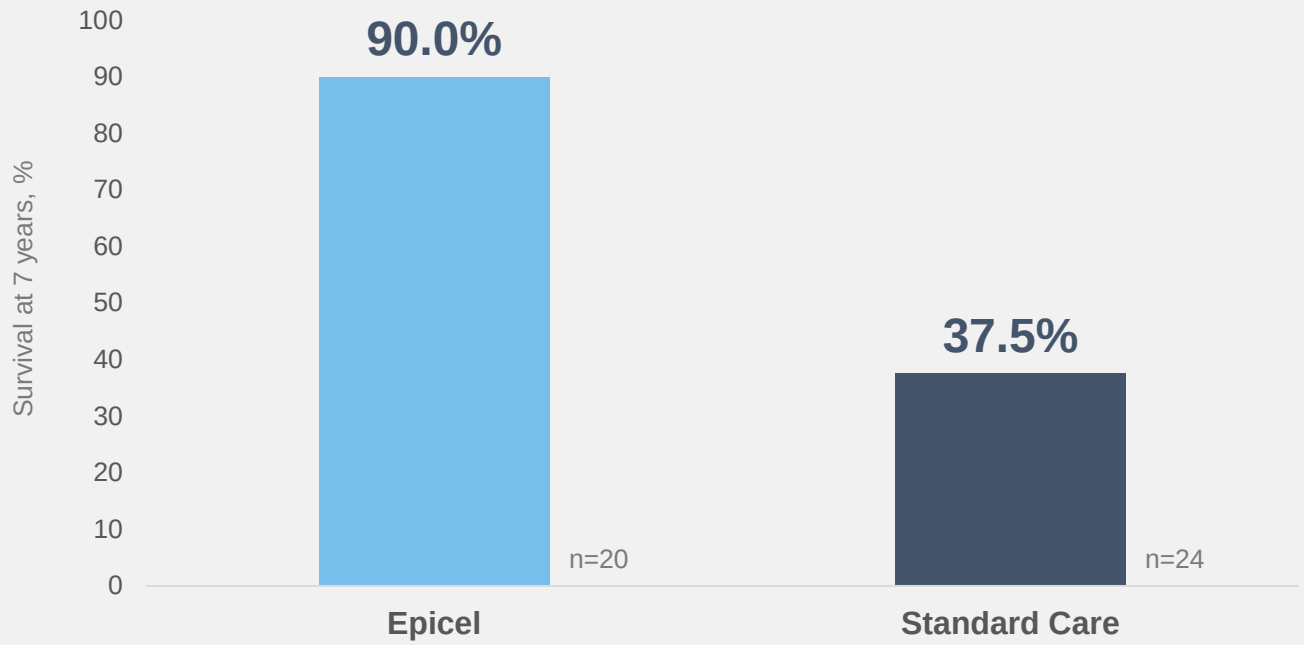
A randomized, controlled, independent, physician-sponsored study of severe burn patients[1,2]

- Compared outcomes for patients treated with Epicel (n=20) vs standard care (n=24)

1. Epicel [Directions for Use]. Cambridge, MA: Vericel Corporation; 2016.
2. Munster AM. *Ann Surg.* 1996;224(3):372-375.

A Prospective, Controlled Trial of Epicel

***Survival Rate*[1-2]**

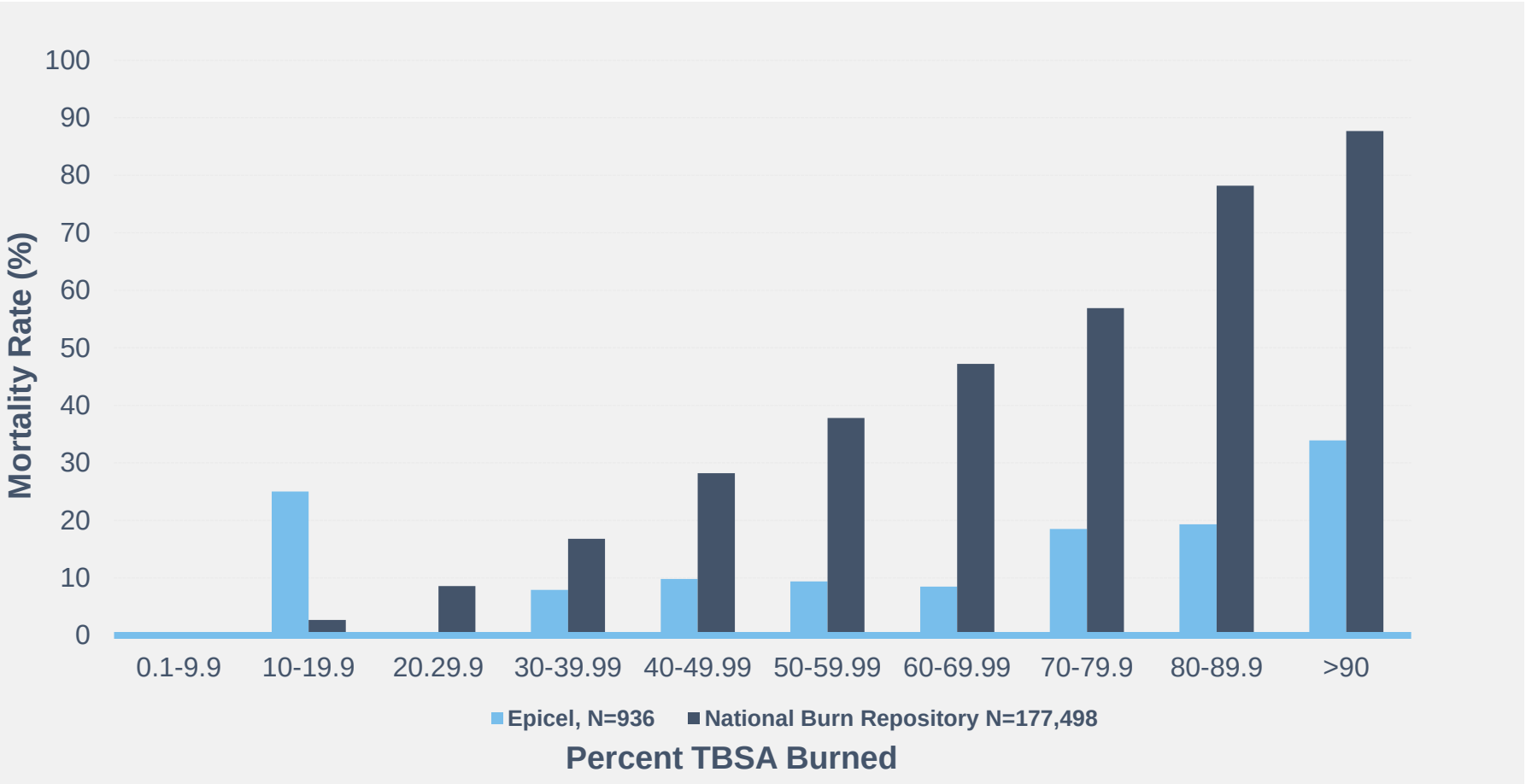


	Epicel	Standard care
Mean TBSA, %	69.1 ± 15.03	62.9 ± 13.16

1. Epicel [Directions for Use]. Cambridge, MA: Vericel Corporation; 2016.
2. Munster AM. *Ann Surg.* 1996;224(3):372-375.

Comparison of Epicel Patient Database to National Burn Repository[1]

Data Demonstrates Lower Mortality Rate



Twenty-five Years' Experience and Beyond with Cultured Epidermal Autografts (CEA) for Coverage of Large Burn Wounds in Adult and Pediatric Patients, 1989-2015; Hickerson, American Burn Association Annual Meeting (March 23, 2017).

The American Journal of Sports Medicine (2014) 42(6), 1384-1394.

Summary of Epicel Clinical Experience

Epicel has been used in more than 1500 patients with burn injuries since it was commercially introduced in 1988

Information about patients who received Epicel has been captured in 2 databases[1]:

- From 1989-1996, the survival rate was:
  - **86.6%** (total population), **89.3%** (pediatric population)
- From 2007-2015, the survival rate was:
  - **81.3%** (total population), **88.3%** (pediatric population)

A physician-sponsored study found a reduction in mortality for patients treated with Epicel when compared with standard care[2]

1. Epicel [Directions for Use]. Cambridge, MA: Vericel Corporation; 2016.
2. Munster AM. *Ann Surg.* 1996;224(3):372-375.

Epicel Related Poster Presentations at the 50th Annual ABA

Successful Posterior Cultured Epidermal Autograft Placement to a Major Burn Victim: A University Burn Center Experience and Review of the Literature.

Amanda Allen, MD, Kalena Recht, RN, BSN, Jeff Litt DO

Major Burn Injury Successfully Treated with Two Applications of Cultured Epithelial Autograft: Establishing Standard Clinical Practices.

Julie A. Rizzo MD, FACS, Monica L. Abbott, RN, Kalena Recht, RN, BSN

Epicel Case Study Presenters

Jeffrey S. Litt, DO, FACS

Clinical Assistant Professor, Division of Acute Care Surgery, School of Medicine
Medical Director, University of Missouri Burn and Wound Program
Columbia, MO

William Dominic, MD, FACS

Clinical Professor, Department of Surgery, UCSF Fresno
Medical Director, Leon S. Peters Burn Center
Fresno, CA

- Speakers are paid consultants on behalf of Vericel Corporation.
- The information contained in the following material does not constitute medical advice. The information regarding surgical techniques are general guidelines. Individual results will vary among patients and depend on many factors. A patient's healthcare provider should consider the circumstances of each patient when considering Epicel®.

Epicel®
(cultured epidermal autografts)

Epicel Case Study
Jeffrey S. Litt, DO, FACS

Clinical Assistant Professor, Division of Acute Care Surgery, School of Medicine
Medical Director, University of Missouri Burn and Wound Program
Columbia, MO
President of North American Burn Society

Education & Training
Medical School: Lake Erie College of Osteopathic Medicine
Internship: St. Luke's Hospital
Residency: York Hospital
Fellowship: Vanderbilt University Medical Center
Board Certification: American Board of Surgery

Patient Case

Patient Profile

Admission & Pre-Op

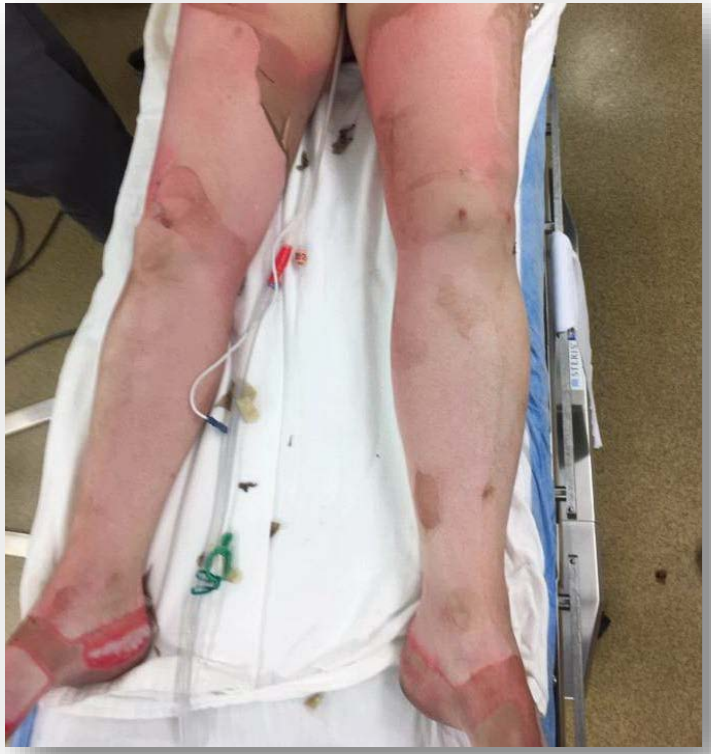
Surgical Application & Post-Op

Follow Up

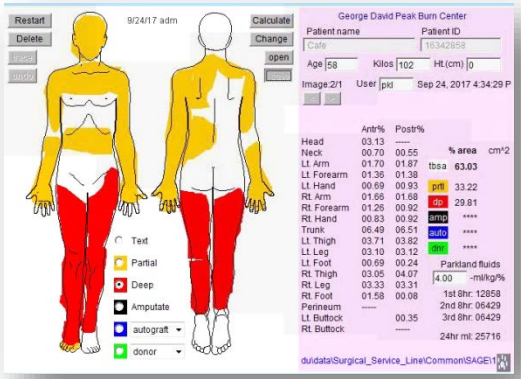
- 58 year old female
- TBSA = 63%
- Length of Stay = 62 Days
- Estimated Chance of Survival = 30%

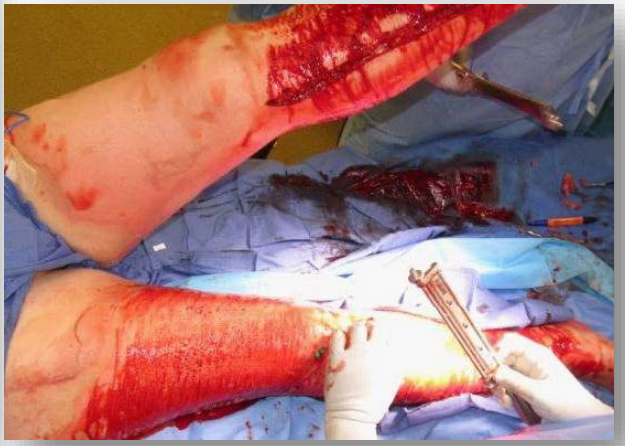
Patient Case

- Patient Profile
- **Admission & Pre-Op**
- Surgical Application & Post-Op
- Follow Up



Admission



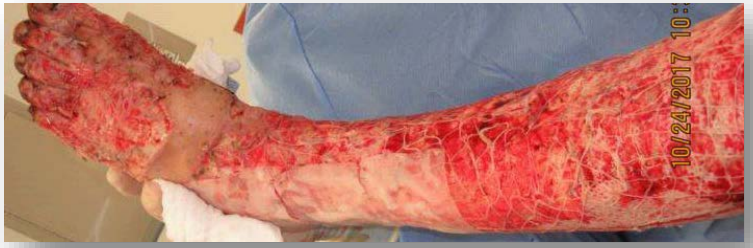


Debridement and Escharotomies

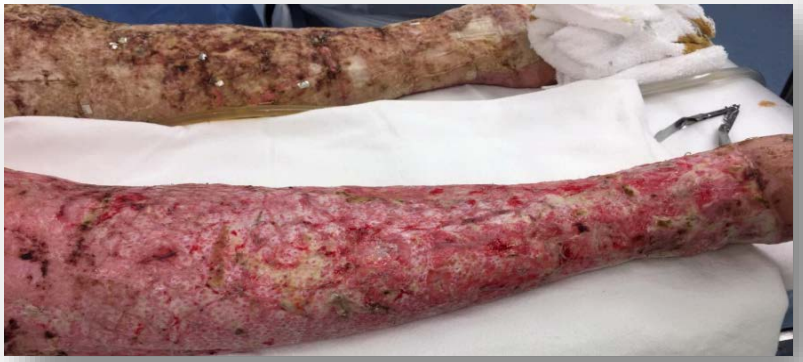
Patient Case 1

- Patient Profile
- Admission & Pre-Op
- **Surgical Application & Post-Op**
- Follow Up

CEA Application over 6:1 Autograft



Take Down Post-Op Day 9

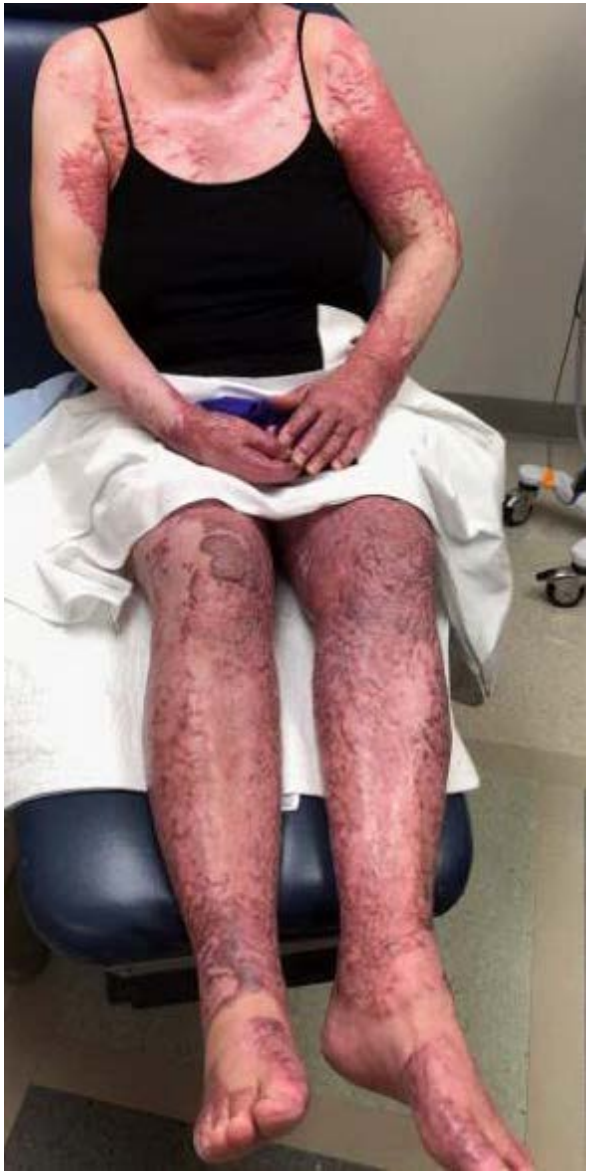


Post-Op Day 12

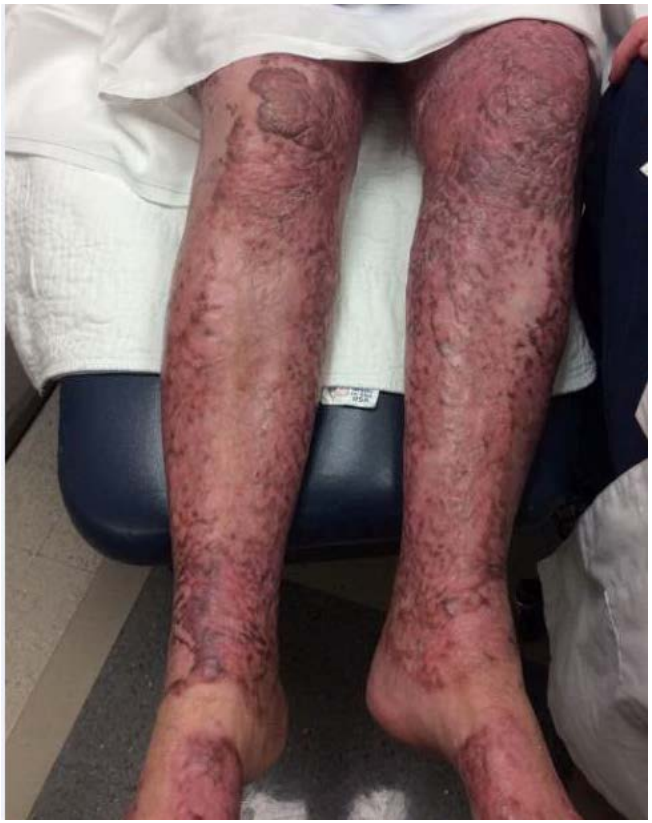
LLE

RLE

- Patient Profile
- Admission & Pre-Op
- Surgical Application & Post-Op
- **Follow-Up**



187 Days Post-Burn



VERICEL

Epicel®
(cultured epidermal autografts)

Epicel®
(cultured epidermal autografts)

Epicel Case Study
William Dominic, MD, FACS

Clinical Professor, Department of Surgery, UCSF Fresno
Medical Director, Leon S. Peters Burn Center
Fresno, CA

Education & Training
Medical School: Case Western Reserve University
Residency: University of Colorado Denver
Burn Fellowship: University of Colorado Denver
Burn Clinical Research Fellowship: University of California San Diego
Board Certification: American Board of Surgery

Patient Case

Patient Profile

Surgical Application

Rehabilitation

- 49 year old male

Patient Case

Patient Profile

Surgical Application

Rehabilitation

- 49 year old male
- TBSA = 70% TBSA (50% TBSA Full Thickness Burn)
- Inhalation Injury
- Length of Stay = 5 months (approximately)

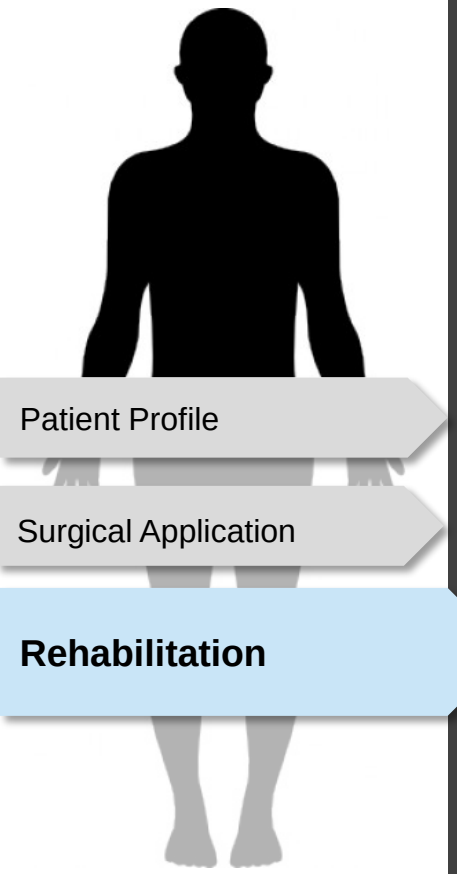
Patient Case

Patient Profile

Surgical Application

Rehabilitation

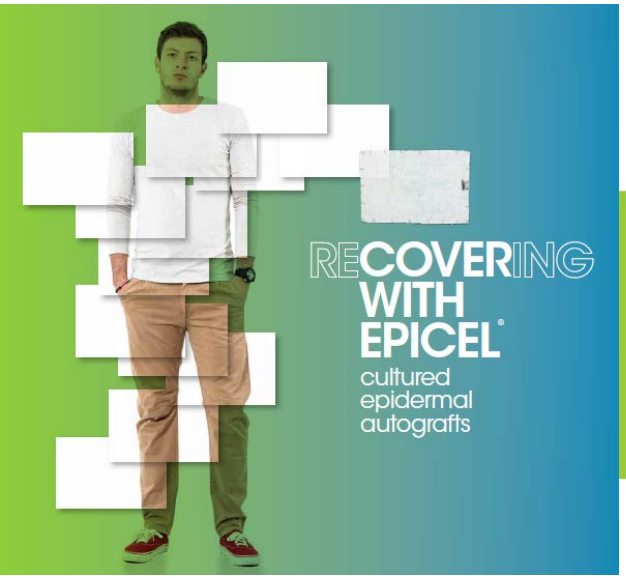
Patient Case



Patient Profile

Surgical Application

Rehabilitation



Epicel Commercial Update

Large Addressable Burn Care Market for Epicel

Estimated U.S. Burn Patients[1]

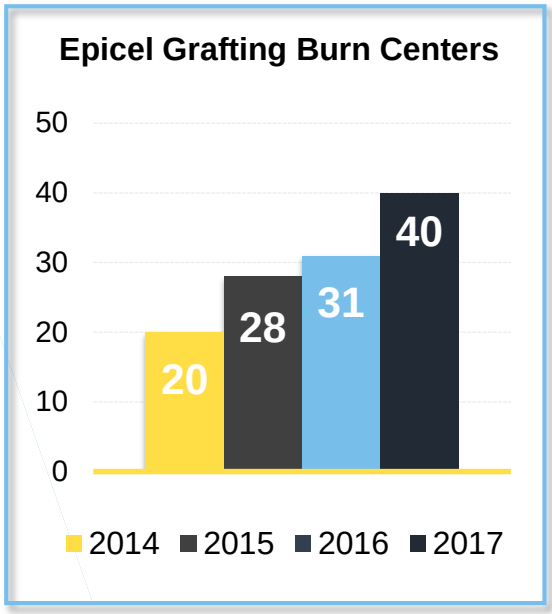
500,000
Annual Burns (U.S.)

40,000
Hospitalized Patients

1,500
Epicel-Indicated (>30% TBSA) Patients

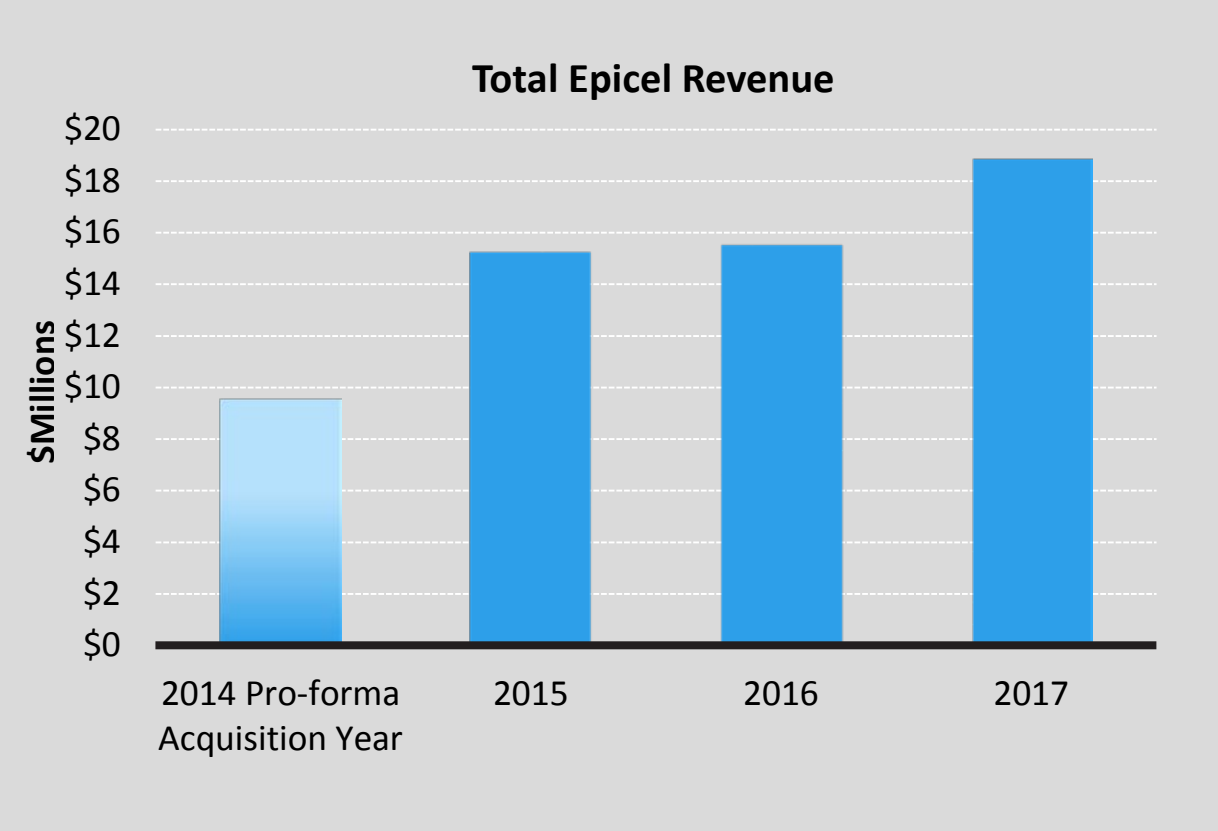
600 Surviving >40% TBSA Patients

$120 M
Addressable Market in the U.S.[2]



1 2012 National Burn Repository Report Version 8; 2013 National Burn Repository Report Version 9; 2014 National Burn Repository Report Version 10.
2 Assumes 600 patients x 1.25 (25% re-order rate) x 67 grafts per order x $2,354 per graft.

Investments Since Acquisition of Epicel Are Driving Growth



2017 REVENUE=$18.9M

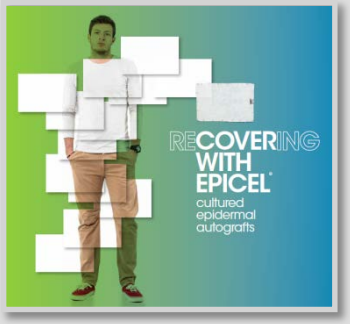
22% growth in 2017 with significant variability from quarter to quarter due to relatively small patient population

Strategic Imperatives

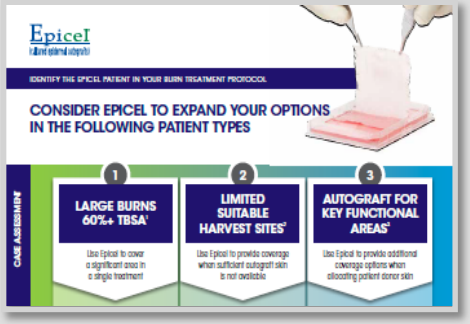
STRATEGIC IMPERATIVE	GOAL	OBJECTIVE
IDENTIFY PATIENTS	Establish Epicel as a standard within the burn treatment protocol	Establish protocols with early identification of potential patients
INCREASE UTILIZATION	Educate regarding the clinical benefits of Epicel	Create educational programs and training to raise awareness and promote additional medical evidence to support the optimal use of Epicel
ENHANCE ACCESS	Remove barriers for usage and reimbursement	Enhance support and access to Epicel and associated reimbursement by including key decision makers in center adoption

Strategic Imperatives

STRATEGIC IMPERATIVE	GOAL	OBJECTIVE
IDENTIFY PATIENTS	Establish Epicel as a standard within the burn treatment protocol	Establish protocols with early identification of potential patients



New brand concept and messaging to raise awareness of product benefits

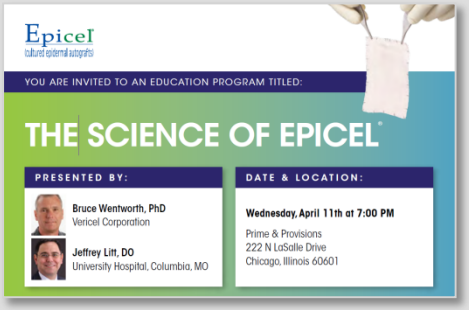


Treatment pathway tool to help surgeons identify patient types where Epicel may be the most appropriate option

Promote physician and patient success stories in key markets for local and national coverage

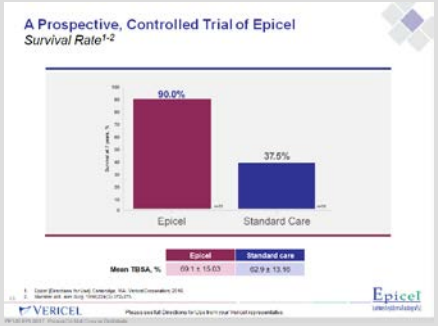
Strategic Imperatives

STRATEGIC IMPERATIVE	GOAL	OBJECTIVE
INCREASE UTILIZATION	Education regarding the clinical benefits of Epicel	Create educational programs and trainings to raise awareness and promote additional medical evidence to support the optimal use of Epicel



National and regional peer-to-peer educational programs will expand Epicel reach across key customer institutions

Regional surgical demonstrations will educate burn surgeons and nurse teams on Epicel surgical protocol and best practices

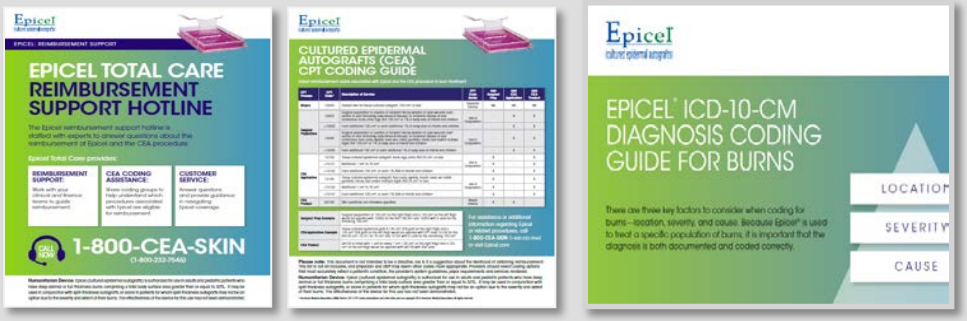


Leverage available data supporting probable survival benefit with Epicel

Strategic Imperatives

STRATEGIC IMPERATIVE	GOAL	OBJECTIVE
ENHANCE ACCESS	Remove barriers for usage and reimbursement	Enhance support and access to Epicel and associated reimbursement by including key decision makers in Center adoption

Leverage identified KOLs to advocate with payers



New reimbursement hotline and resources will help hospitals navigate the reimbursement pathway

Epicel Summary

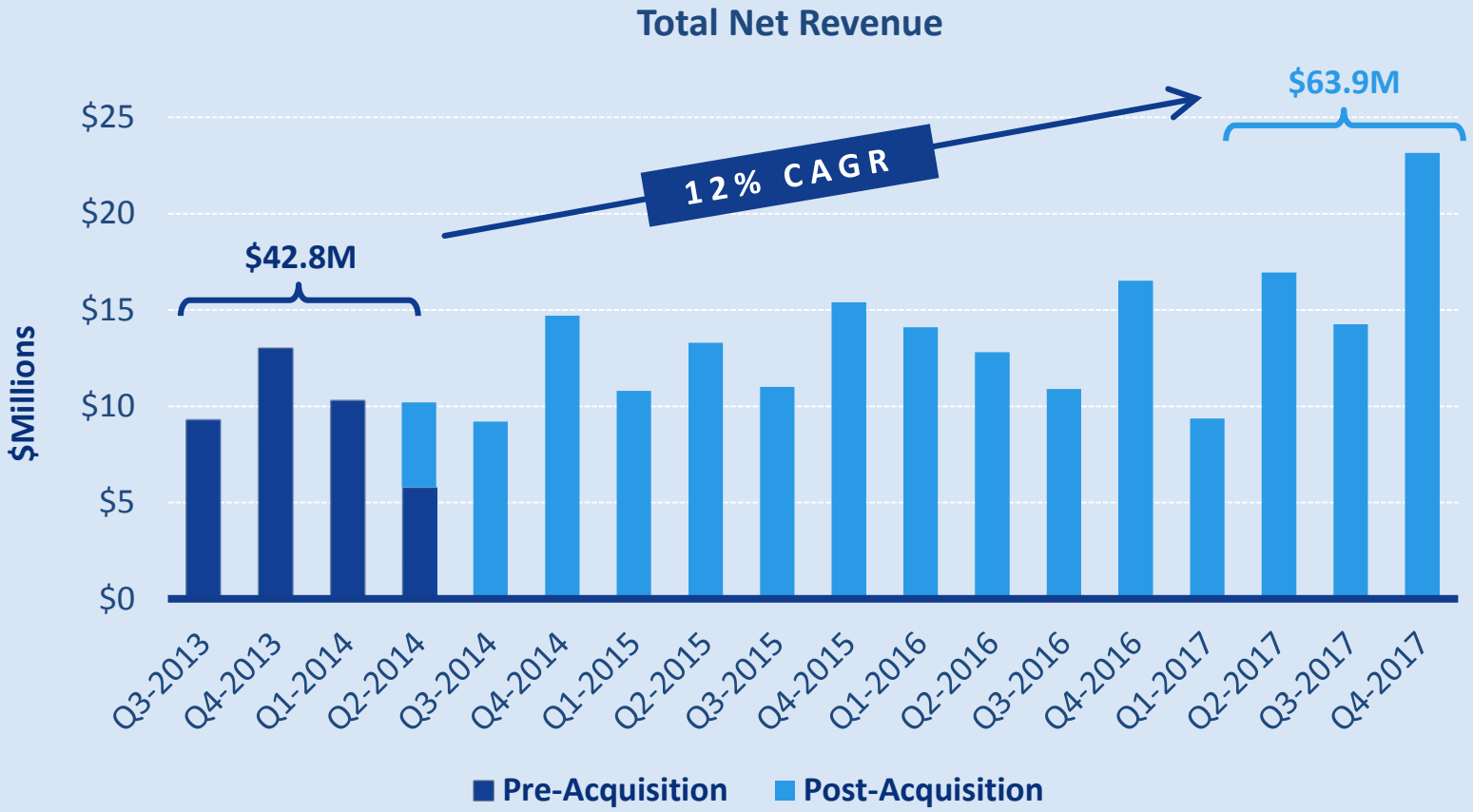
1. **Investments in Epicel** are paying off since acquisition with 25% CAGR since acquisition and 22% growth in 2017

2. **Strengthening brand value** will be a top priority to help establish Epicel as a standard within the burn treatment protocol

3. **Expanding peer-to-peer programs and launching reimbursement resources will be essential to** develop partnerships with key burn stakeholders

FINANCIAL OVERVIEW

Strong Total Revenue Growth Since Acquisition



2017 Revenue = $63.9 million

12% CAGR since the acquisition of Carticel/MACI and Epicel

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Continued Revenue Growth is Expected to Generate Strong Margin Leverage and Earnings Growth

Maximize market penetration of MACI and Epicel

Continue growth in number of MACI surgeons

Increase number of biopsies per surgeon and increase conversion rate

Expand number of burn centers utilizing Epicel

+

Gross Margin and Operating Leverage

Continued volume growth and higher utilization of existing manufacturing capacity drive further gross margin improvement given <20% marginal COGS for MACI and Epicel

Premium-price products with concentrated call points drive highly efficient SG&A cost structure

+

Strong Balance Sheet

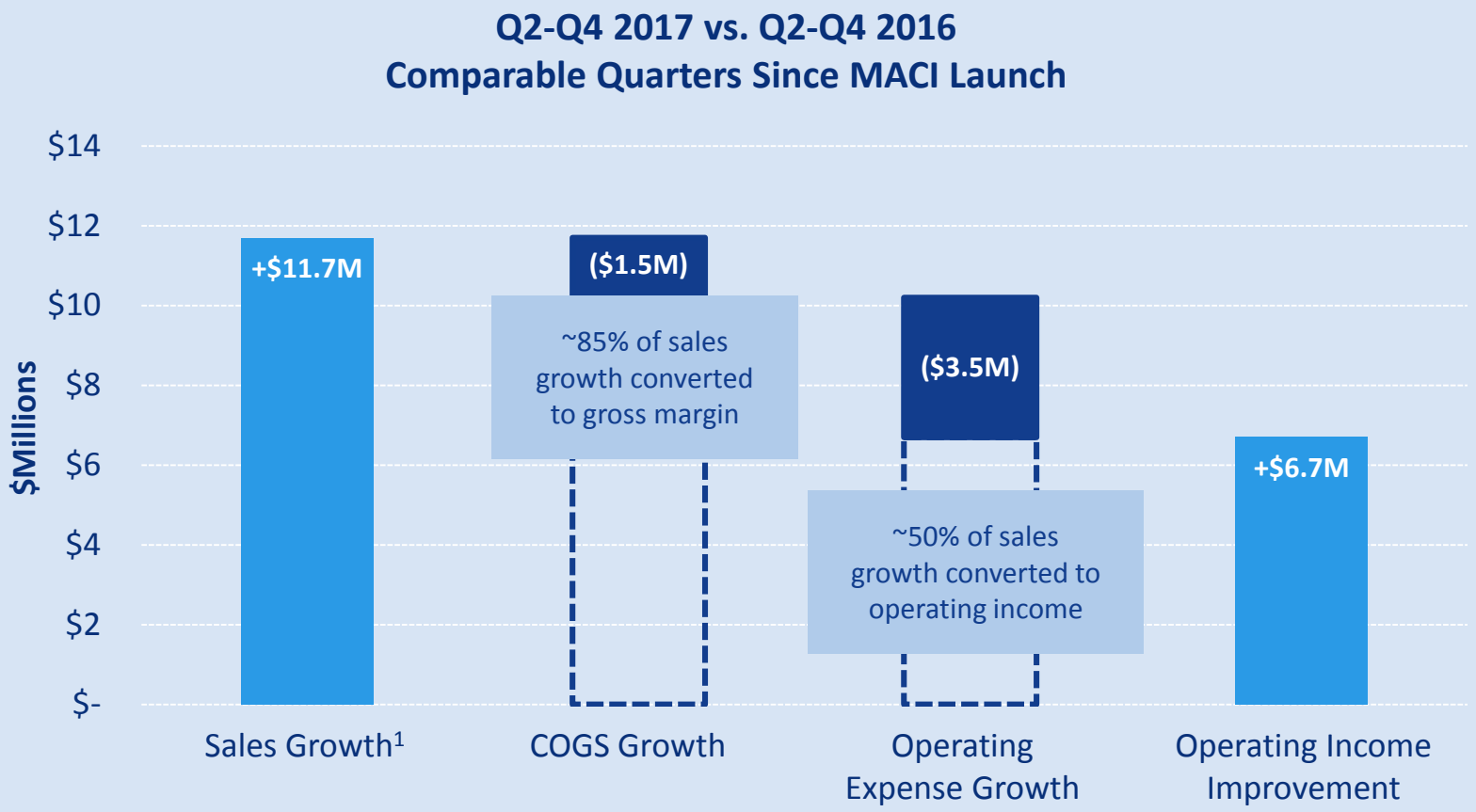
Cash on hand expected to be sufficient to fund operations to reach profitability without additional dilutive financing

=

STRONG EPS GROWTH

Sales levels reaching inflection point where strong earnings growth is expected

Recent Financial Results Demonstrate Business Model Leverage



Recent financial results demonstrate that continued revenue growth should further improve gross margins and generate significant operating income leverage.

12017 sales growth excludes the net $1.4M reversal of revenue related to a pharmacy dispute booked in Q1 2017

VERICEL

Balance Sheet and Capital Structure

Balance Sheet Highlights	December 31, 2017
Cash	$26.9 million
Term Loan and Revolver	$17.5 million
Available Balance on Revolving Debt Facility	$7.5 million

Capitalization *(as of March 31, 2018)*	**Shares**
Common Stock	36,501,816
August 2013 Warrants (strike price=$4.80; expire August 16, 2018)	365,150
September 2016 Warrants (strike price=$2.25; expire September 9, 2022)	117,074
December 2017 Warrants (strike price=$4.27; expire December 6, 2023)	53,902
Options Outstanding	5,620,627
Fully Diluted Shares Outstanding	**42,658,569**

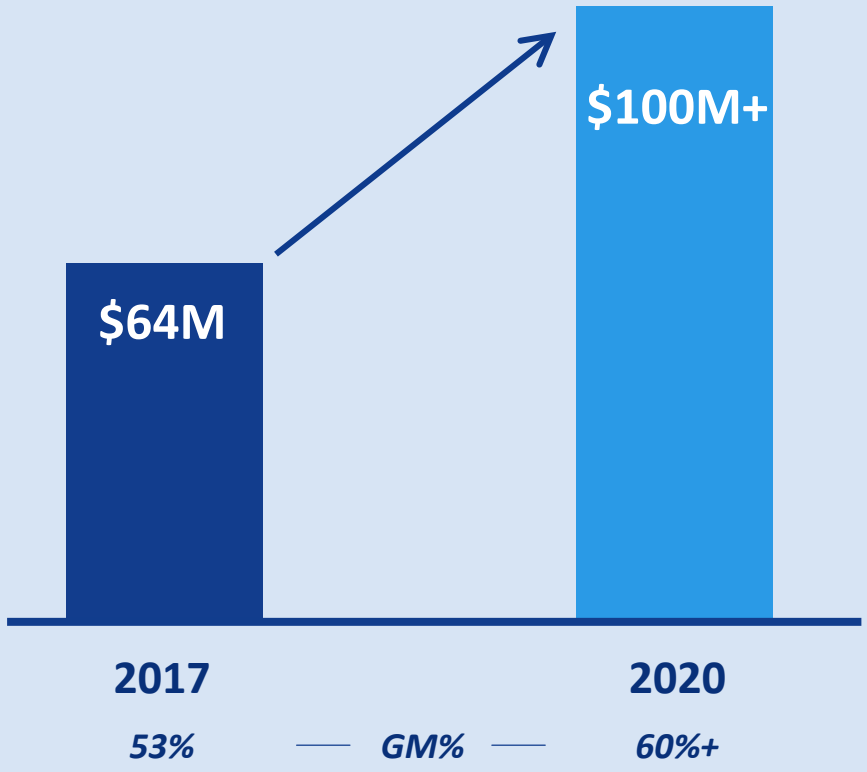
CLOSING REMARKS

Vericel 2020 Target Financial Profile

Financial Drivers

- Expanded sales force
- Continued brand investments to build surgeon base
- Launch of patient engagement initiatives for MACI to improve conversion rate
- Largely fixed cost structure to drive margins

MACI and Epicel Revenue



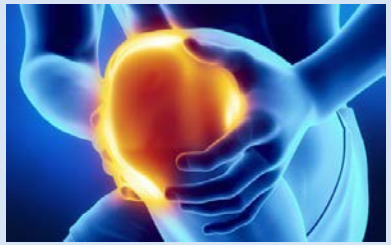
2020 Targets:

$100M+ product revenue for current product portfolio with gross margins greater than 60%

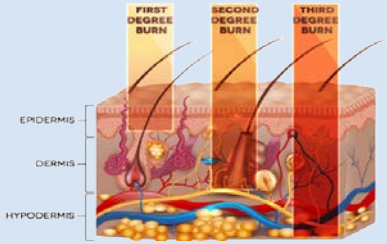
Strategic Transactions to Maximize Long-Term Value

ADVANCED CELL THERAPY DEVELOPMENT AND MANUFACTURING PLATFORM

Sports Medicine
Franchise



Severe Burn Care
Franchise



New Vertical(s)

Q&A

Vericel is a leader in advanced cell therapies for the sports medicine and severe burn care markets.

VERICEL

INVESTMENT HIGHLIGHTS

maci

Epicel® (cultured epidermal autografts)

Innovative Advanced Therapy Platform

Top-Tier Revenue Growth

Significant Margin Expansion Potential

Strong Balance Sheet