



Nanochon, LLC

"Repairing your active life"

www.nanochon.com

1/30/2019

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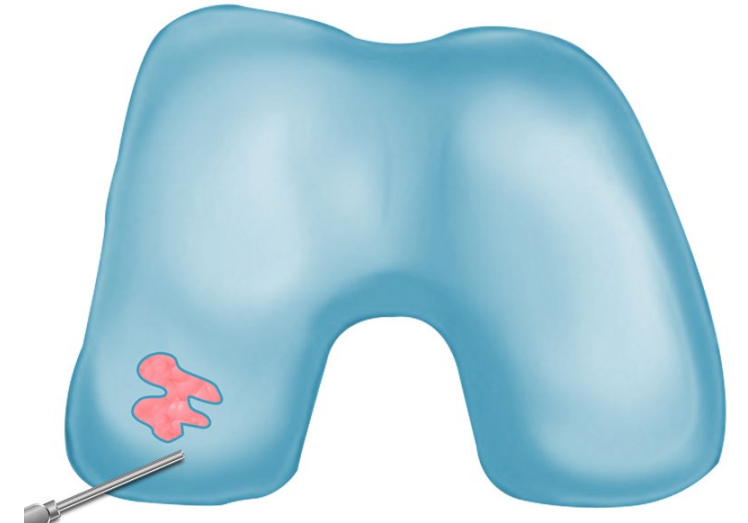
Vision

Low cost high efficacy device to treat joint defects

Today recovery is slow, incomplete and temporary, often resulting in partial or total joint replacement

Existing treatment for young and active patients is costly, invasive, and limited in efficacy

On-market product **expensive one-offs**

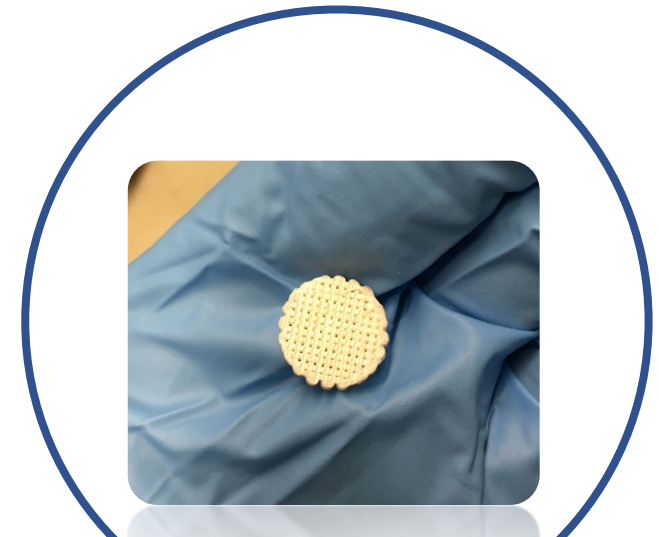
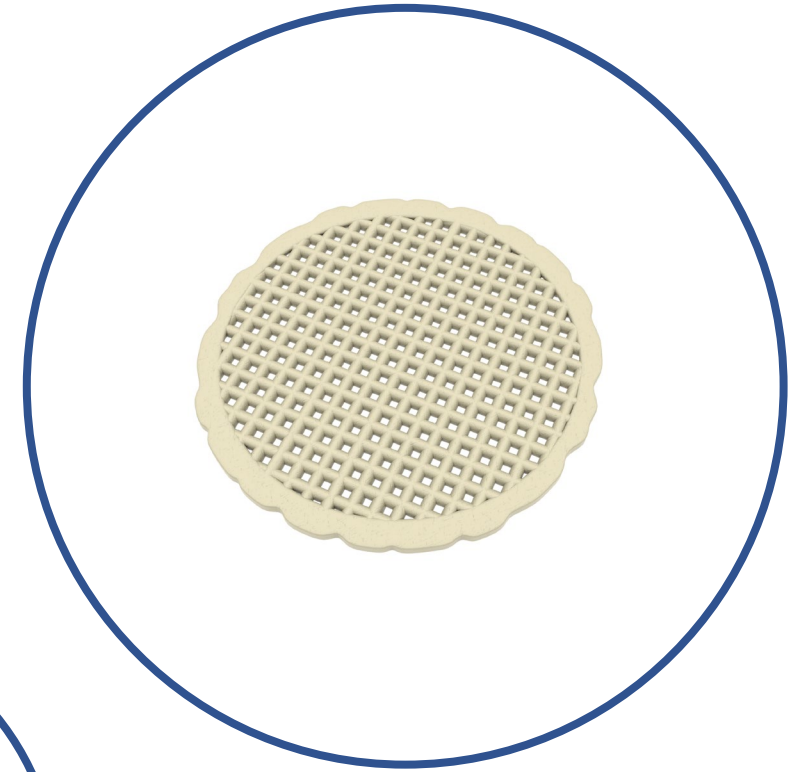


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Technology

A flexible implant, designed to replace cartilage

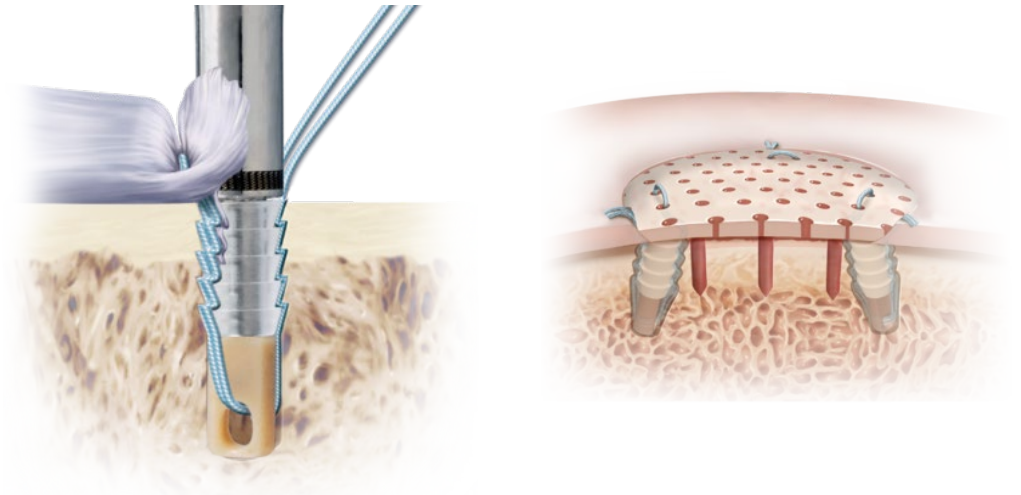
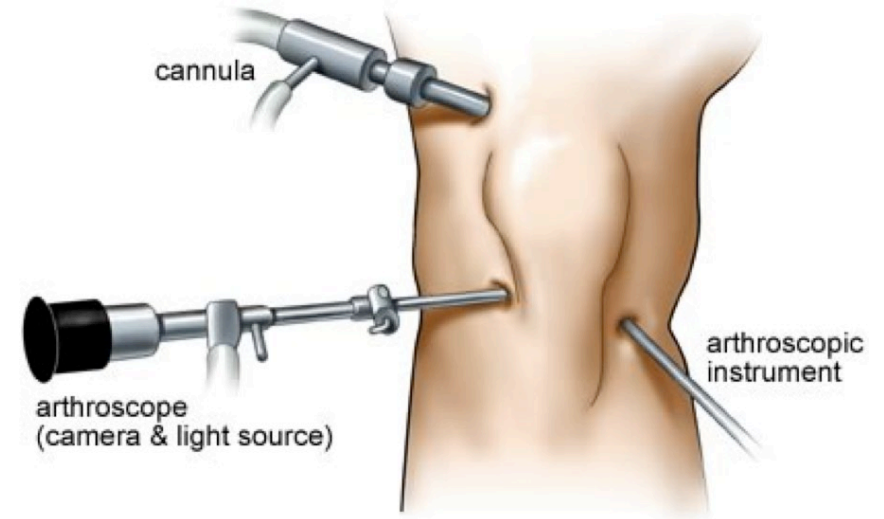
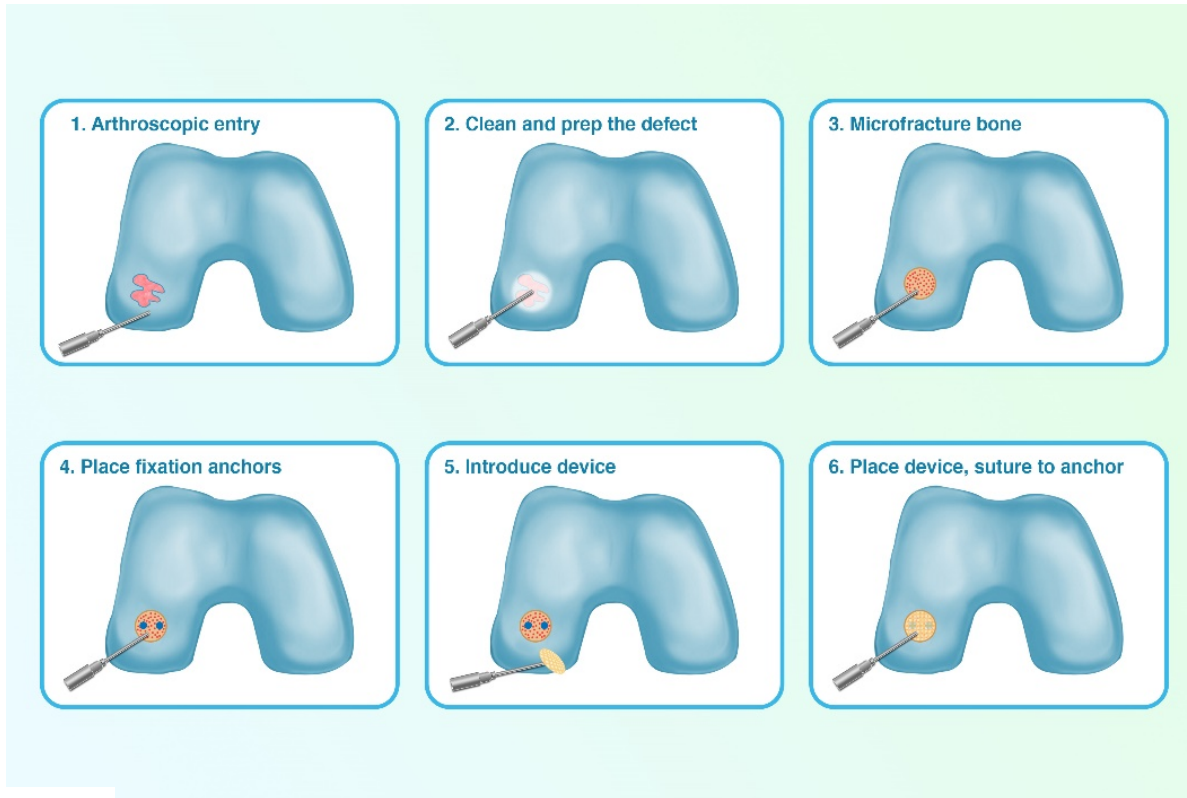
- Designed to re-surface 1 cm – 3 cm cartilage damage and severe cartilage loss
- Novel bioactive implant, known and durable material, proprietary nano and micro structure
- 3D printed = flexible device + growth matrix
- **Acts as minimally invasive, permanent replacement for cartilage**



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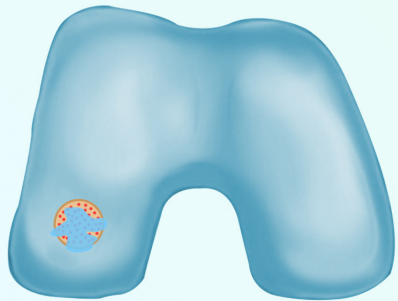
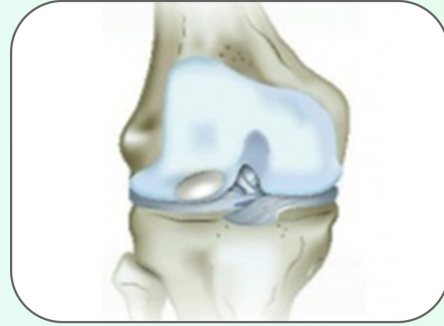
Clinical Use of **Nanochon™**

- **Arthroscopic** entry
- Chondroplasty + **microfracture** to prep site
- Implant, **suture anchor** fixation

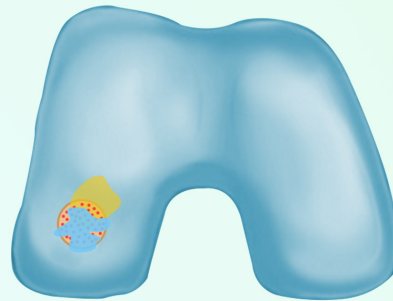


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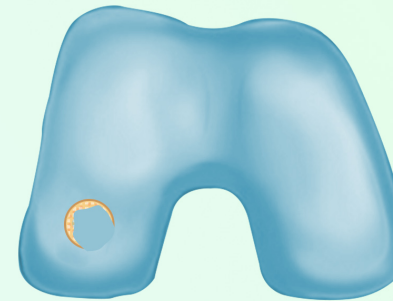
Potential Benefits of Nanochon™



Microfracture generates a scar, lasts for 1 year



Grafts/solid implants have long and faulty recovery, last for 2 years



Nanochon™ supports weight AND grows new cartilage after just 4 months

- **NOT a bespoke cell solution**, lower cost and efficient easy use in the clinic
- Nanochon is a minimally invasive treatment for large cartilage injuries (1.5 cm – 3 cm)
- Cartilage-like material and 3D printing means **immediate repair of damage**
- Long term cartilage growth means better integration with the body and much **longer lasting**
- **Flexibility** means minimally invasive arthroscopic procedure, much better outcomes for patients

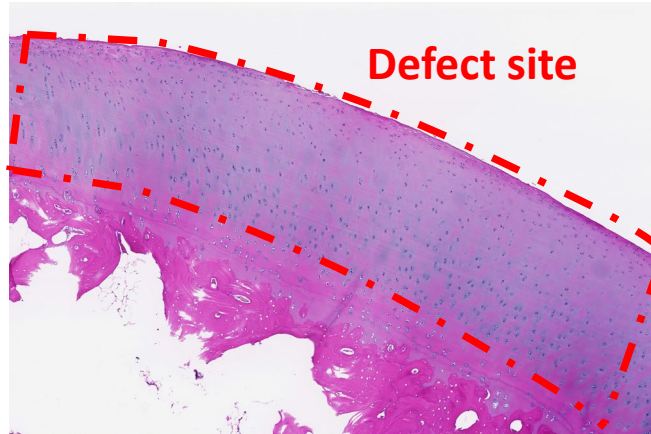


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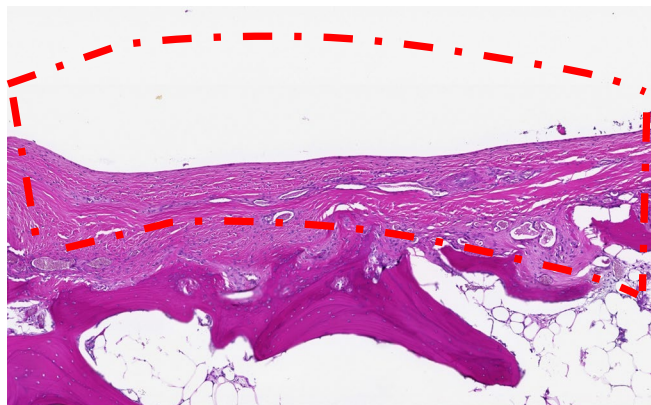
Proof of concept study **Nanochon™**

1 cm defect treated in goat knees, better than microfracture, better than non-3D implant

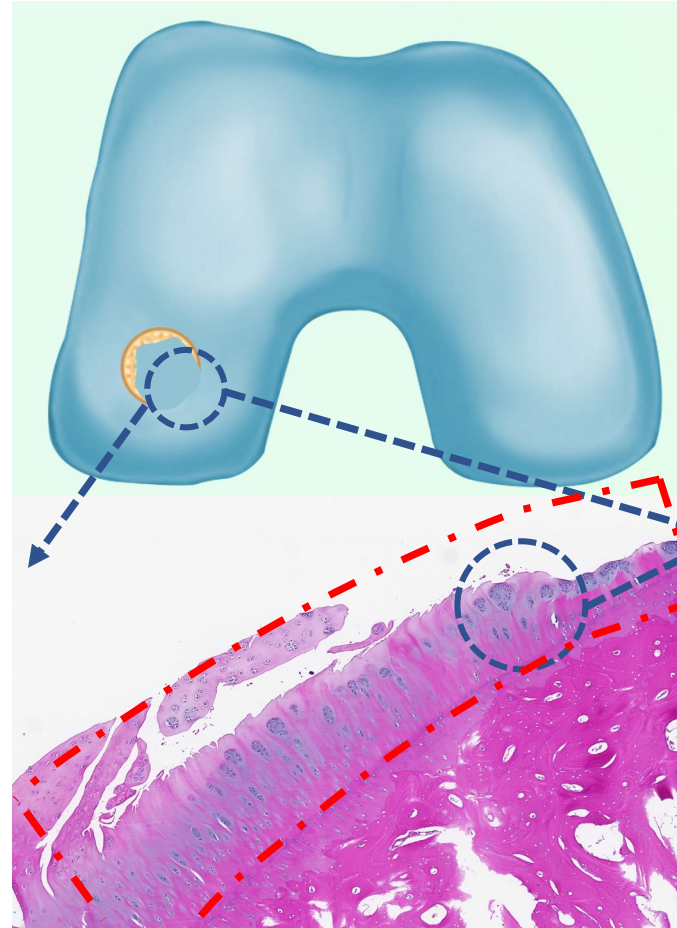
Normal cartilage



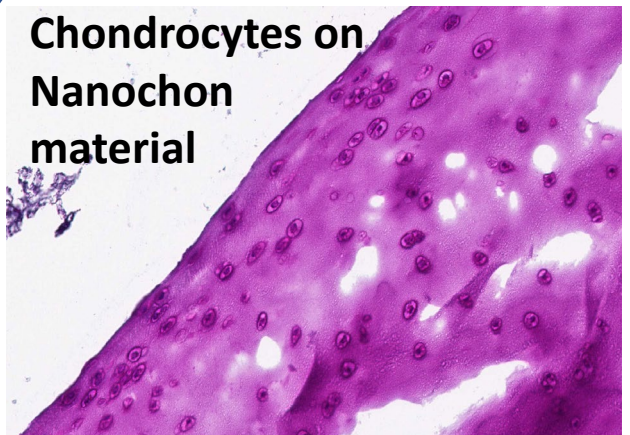
Microfracture



3D implant



10X



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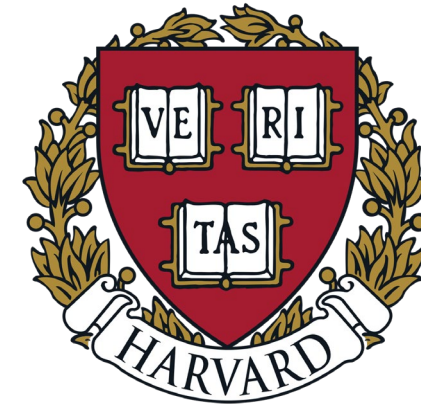
KOL engagement

250+ customer discovery interviews
Over 100 surgeons

Several notable KOLs engaged

Major takeaways:

- **Lower cost, and “manufactured” device to treat cartilage loss sooner**
- **Need a more robust, less invasive device**
- **Better outcomes, recovery and long term**



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Potential Benefits of **Nanochon**TM

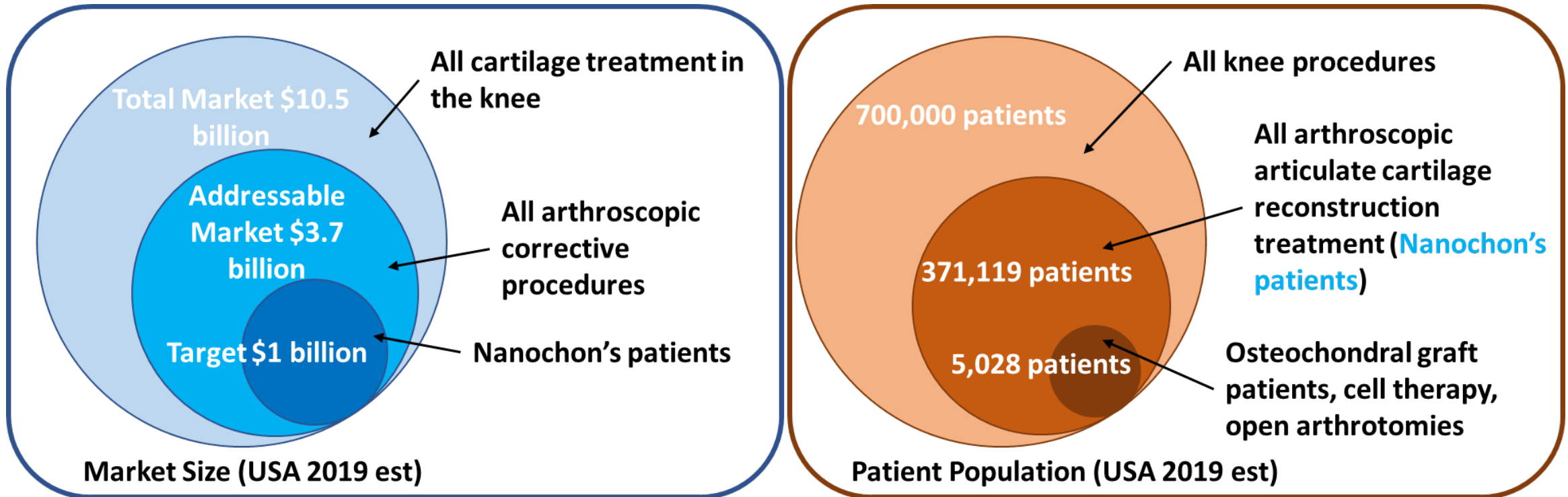
For health systems and payers

- Revenue generating treatment (reimbursable treatment vs MACI or Cartiform)
- Quicker treatment after diagnosis (worst case: 6 month donor tissue)
- New and better treatments can attract more patients
- 3D printing = smaller production lots (2-3 month supply vs 1 year) increase margins for hospitals.
- Faster treatment = reduced overall cost per patient (recovery and rehab)
- More effective treatment = less treatments in a patients lifetime (1-2 treatments vs 4-5)



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Market Size vs Patient Population *



- Target Market focuses on “front line” treatments (microfracture)
- High unmet need = billion dollar market
- Reimbursable product = lower cost per patient, not out of pocket (e.g. MACI), means average patients can afford the treatment

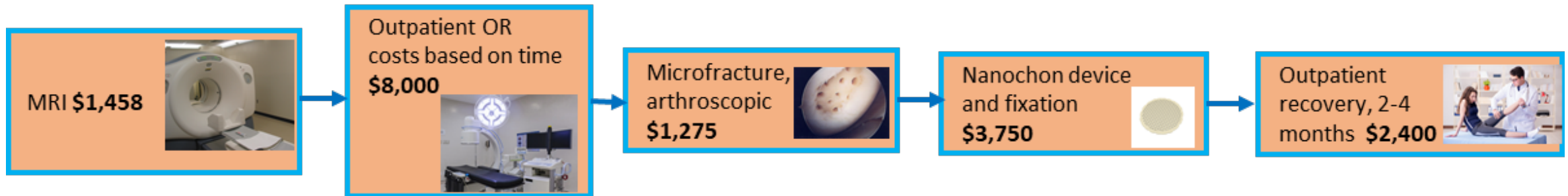


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* McCormick, F., et al., *Trends in the surgical treatment of articular cartilage lesions in the United States: an analysis of a large private-payer database over a period of 8 years*. Arthroscopy: The Journal of Arthroscopic & Related Surgery, 2014. **30**(2): p. 222-226.

Reimbursement and Cost of **Nanochon**^{TM*}

- Long term goal is to have a **reimbursable product**
- Offers multiple CPT codes per procedure
- Existing codes: **chondroplasty, microfracture, the device itself** (graft implant \$2,750 for implant alone)
- Additional codes for pre-procedure imaging, the OR (surgicenter) additional materials
- Revenue comes to provider in short term (extra codes opposed to just one or two, reimbursable = more patients treated)
- Savings comes to payer long term (shorter recovery time, fewer procedures over patient's lifetime)
- **Clinical trials in 2019-2020-2021 will build case for reimbursement and clinical adoption**



\$16,883 total cost, potential savings \$193,185 (advanced treatment, recovery time and eventual and knee replacement)



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* cost data based on current catalogue of CPT codes and recommended reimbursement

Founders



Ben Holmes – CEO

- BS in MAE from UVA
- PhD from GW, biomaterials, 3-D printing, stem cell growth, orthopedics
- **NSF I-Corps program (Best Entrepreneurial Lead)**
- VentrueWell's ASPIRE program for medical devices.
- **JLABS Resident @NYC fall 2018**
- **Raised funding for Nanochon:** grants + seed and f&f funding over \$350,000



Nathan Castro – CTO

- BS in Chemistry with Honors from the University of Texas at El Paso
- MS in Engineering at UTEP, 3-D printing and device manufacture
- PhD from GW, **Provost Fellow and Lab Manager**
- Postdoc at QUT in Dietmar Hutmacher's 3D printing lab
- **NIST visiting fellow in fall 2018**
- Co-founder of Nanochon



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Key Team Members



Matthew Scherer – financial

- Mergers, acquisitions, and divestitures over \$6 billion
- Capital raises in excess of \$15 billion.
- **Acting CFO, medical device company SonoStik LLC**



John Rodriguez – product development

- Product Development leader with over 25 years of experience
- Global and domestic manufacturing operations
- **Domain expertise (Cytori)**



Matthew Dowling – entrepreneurship

- CSO and Director of gel-e.
- Licensed gel-e from UMD and has raised **\$4.0M in non-dilutive funding**
- **FDA clearance** for gel-e



Christopher Cannova MD - medical

- Georgetown University, the **Hospital for Special Surgery**
- Commercial experience with start-ups, HSS and **Zimmer Biomet**



Matthew Cunningham – general counsel

- Intellectual property, transactions, and corporate law
- **Significant life sciences experience**
- Former attorney at Weil, Gotshal & Manges LLP



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- Raising **\$1.5M** at **\$5M** pre-money, preferred shares
- **First in human study in Q4 2019** with committed partner in Australia
- ISO 10993 testing, patent maintenance, company operations, manufacturing space
- Will work with **NIH SBIR Phase II** grant funding (**\$1.5M**) - **AO Foundation** funding (**\$1M**)
- **To date** Nanochon has raised \$472,000 through grants, **SBIR**, friends and family, WSGR Fund and **DePuy Mitek** support



Timeline and milestones

2018



- **Proof of concept goat study**
- Material and design verification
- New IP filed, existing portfolio prosecution
- FDA pre-sub meeting
- **Seed investment secured**
- **JLABS residency**
- **\$354K raised to date**

2019



- **Establish manufacturing operation**
- Begin human trial 1 year
- Begin 510(k) testing
- Additional large animal study – surgical technique
- **First patent award**
- **\$1.5M equity round, additional non-dilutive funding**

2020



- **Complete human trial**
- **510(k) award**
- **Additional patents awarded**
- Series A raise, pivotal study (compare to microfracture, 100 patients, 1 year)
- **\$12.5M to execute**

2021



- **Complete pivotal human trial 1 year**
- **Exit to strategic partner**
- **Potential exit up to \$400M (Cartiva 2018 comparable)**



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Summary – key investment considerations



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- **High unmet need** and renewal of commercial interest by investors, strategic and innovators (Cartiva, Hyalex, CartiHeal)
- There is a history of successful exits past and present (Cartilix ~\$100M, Cartiva ~\$400M, Ivy Sports Medicine)
- Nanochon is poised for rapid growth, successful proof of animal concept completed, **grant, SBIR, strategic support and seed investment traction to date**, 3-4 months of work needed for safety testing, product development, 510(k) testing
- Human clinical data and regulatory approval in Q4 2019 means a product ready for further clinical study by 2020
- An exit will be possible as soon as 2022