Jeremy Goldman

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Areas of research/expertise

Vascular biomaterials, physiology, biology, remodeling, and regeneration.

Main project: We are developing biodegradable metal stents based on zinc.

- Degrade at a rate to fully dissolve inside the artery within 1 – 2 years depending on the strut dimensions
- Does not provoke a harmful biological response

Alloying to increase strength has been successful

Metal	Mechanical Properties			Grain Size [µm]
	Yield Strength [MPa]	Tensile Strength [MPa]	Elongation to Failure [%]	
Benchmark Value	>200	>300	>15	<30
Pure Zn (reference)	<80	<120	60 - 80	>50 - 100
Zn-Al alloys	190 - 240	220 - 310	14 - 33	<30 - 50
Zn-Li Alloys	240 - 360	360 - 560	2 - 17	<30 - 50
Zn-Mg Alloys	200 - 500	230 - 630	12 - 60	<30

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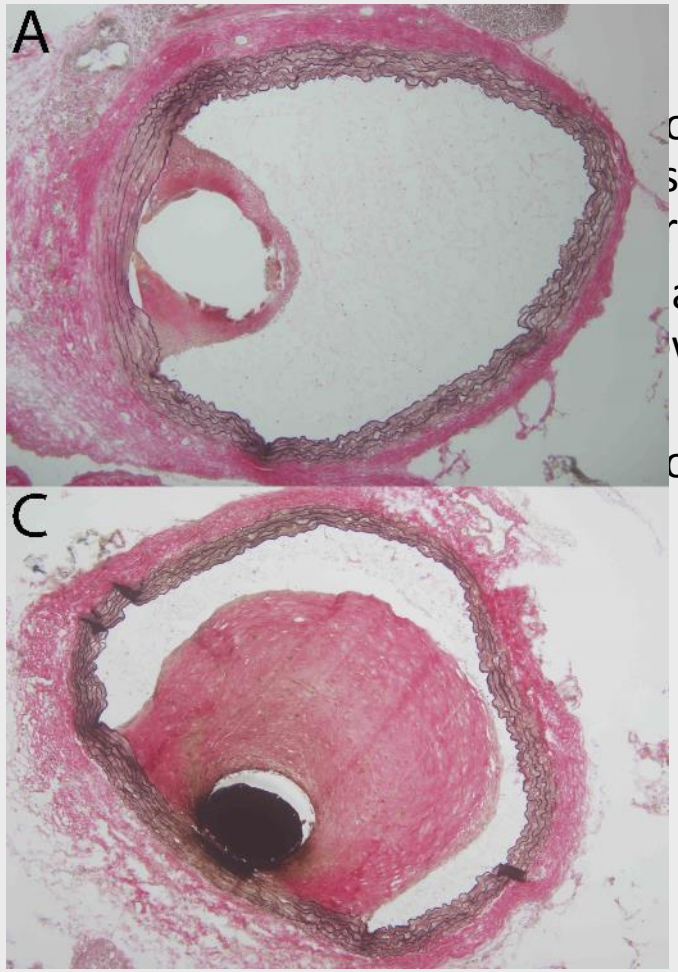

ointima that forms around the zinc metal implant does not
ss in thickness or experience cell hyperplasia, in contrast to
rd stent materials.

aracter of the neointima suggests a cell suppressive effect against
wth of harmful cell types.

presently exploring the mechanism of cell suppression by zinc
on products.