How long does healing (osseointegration) take after THR?

Introduction

Hi, my name is Pete and I created a not-for-profit hip vlog to help others facing or recovering from Total Hip Replacement (THR) where I share tips and information based on my own experience and interacting with thousands of other hippies. When I encounter conflicting information, like how long it takes to heal after THR, I try to figure out what the best available research indicates. There is so much research and information out there that it must be next to impossible to keep up with it all, so I wanted to share this study with you.
Companion videos: Executive Summary Video and Full Length Video

Link to study full PDF. Progression of human bone ingrowth into porous-coated implants
https://actaorthop.org/actao/article/view/20764/24596

Summary:

The process and timeline for healing from a THR is often confused with healing from a fracture such as a broken arm or leg, but they are significantly different based on the best research I've been able to find on the subject. The fracture healing timeline is based on healing of compact bone (cortical bone) whereas integration of an artificial hip implant stem occurs within the spongy bone (cancellous bone) inside the femur and follows a very different healing timeline taking a full nine months.

Highlights from the study:

- Early investigations of bone ingrowth using canine and baboon models, non-quantitative human implant retrievals and other studies suggest that bone ingrowth is a fracture healing event occurring within 4-12 weeks postoperatively. More recent studies have suggested that the bone ingrowth process in human cancellous bone proceeds much slower.
- There was a statistically significant progression of bone ingrowth into the implants over a 9-month period.
- Our findings demonstrate that human bone ingrowth plateaus around the 9-month postoperative period. These results in human cancellous bone conflict with previous qualitative investigations which reported bone ingrowth within 4-12 weeks.
- We also found new bone formation in the periprosthetic bone at the interface as well as corresponding advancement of the bone into the porous coating over the 9-month period… These observations do not support the fracture healing model that is

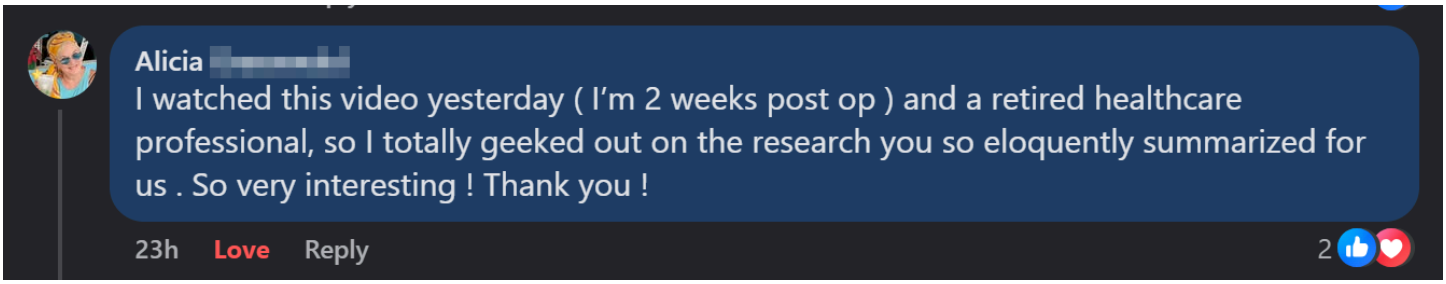
commonly reported, but not histologically quantitatively measured using histometric and fluorochrome labeling techniques.

Time since surgery	% of bone integrated in implant	% of the total expected integration
Start	1%	4%
3 Months	10%	38%
6 Months	15%	58%
9 Months	26%	100%
12 Months	No change, 26%	No change, 100%

Watch this full length video for a full explanation of the table. You can find a further fleshed out version of this table in the article.

Closing

Additional studies can be found in this executive summary video or this full length video and its description.



I hope you found this helpful. Feel free to check out all the other free resources on my hip vlog and feel free to share with your doctor, physical therapist, patients, family, or friends as you see fit. Just trying to reach and help as many hippies as possible. If you have any feedback or suggestions, please email me at Pete@HipVlog.org

More resources and information
Website: HipVlog.org
YouTube: @PetesHipVlog
Facebook: Pete's Hip Vlog
Instagram: HipReplacementVlog

I am not a healthcare professional.
This is not a substitute for professional medical advice, diagnosis, treatment, or care.
Please seek info from your doctor.