

骨整合外科手術 Osseointegration:

歷史：骨整合手術是由在哥德堡的 Per-Ingvar Brånemark 教授發明用於牙科植入物。里卡德 Brånemark 博士繼續這項工作，並將這一項技術開發使用於截肢者。

手術分在兩個階段發生。

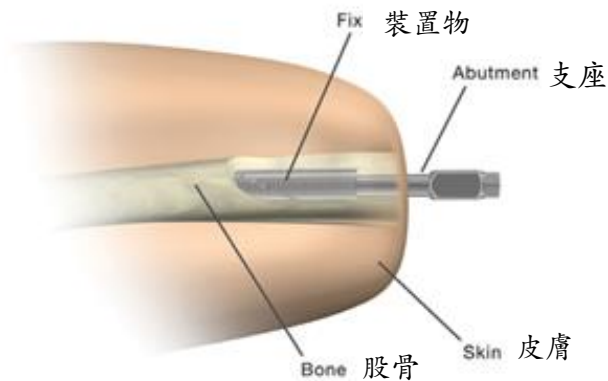
第一階段手術：放置植入骨內（下圖）

History: Osseointegration was developed by Professor Per-Ingvar Brånemark in Gothenburg for the use of dental implants. Dr. Rickard Brånemark continued this work and has developed this technology for use in amputee's.

The surgery occurs in 2 stages.

第一階段手術 Stage 1 Surgery :

放置植入骨內（下圖） Placing the implant inside the bone (Below photo)



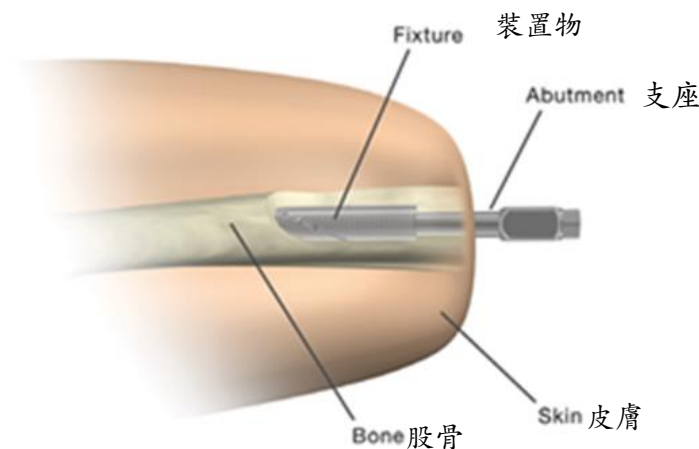
OPRA Implant System implanted in the femur bone of the amputation stump.

種植系統植入截肢的股骨殘肢

第一階段手術後的病人用6個月的時間待骨細胞附著於鈦表面，得到的結果是牢固地裝置了假肢附件和有一個永久的錨固。在此期間，當你的皮膚在手術治愈後，你便可以再使用您的假肢。您也將被鼓勵多做物理治療去強化身體。然後你會進入手術的第二階段。在此手術，你將被放置一個支座，一旦修復完成後，鄰接物便可固定假肢。您將不能穿你的假肢3個月。然後，你將開始一個為短期培訓的假肢增加負重，慢慢地推進到直到你可以穿一個完整的假肢連接到您的支座（穿過你的皮膚出來的鈦種植體針）。這可能需要長達12個月或更長的時間。

After stage 1 surgery patients take 6 months to allow bone cells to attach to the titanium surface and the result is a firm and permanent anchorage for a prosthetic fixture. During this time, once your skin heals from surgery you can go back to using your prosthesis. You will also be encouraged to do physical therapy for strengthening. Then you will come in for stage 2 of surgery. During this surgery you will have the abutment placed which will allow the fixation of the prosthesis once rehab is completed. You will not be able to wear your prosthesis for 3 months. Then you will start with a short training prosthesis and increase weight bearing until you can advance to a full prosthesis that will attach to your abutment (titanium implant pin coming through your skin). This can take up to 12 months or longer.

第二階段 Stage 2:



OPRA Implant System implanted in the femur bone of the amputation stump.

種植系統植入截肢的股骨殘肢

您最終的結果將包含括以前的假肢有一個定制的固定裝置，允許支座和你的假肢之間的連接。（見下文）

Your Final result will include your previous prosthesis with a custom fixation device that allows for connection between the abutment and your prosthesis. (See Below)



OPRA Implant System connected to an external prosthesis through the OPRA Axor™ II.

OPRA 系統通過 OPRA Axor II 連接到外部假肢

好處與優點 Benefits & Advantages

- 恢復全系列的動作和功能
Full range of motion and restored functionality
- 消除壓力，疼痛和皮膚和軟組織的疼痛
Eliminates pressure, sores and pain in skin and soft tissues
- 穩定的附件 Stable attachment
- 假肢可以天天的整天穿 The prosthesis can be worn all day and every day
- 簡化的安裝和拆卸（穿/脫）
Simplified attachment and detachment (don/doff)
- 更好的行走能力 Better walking ability
- 改進的坐時的舒適感 Improved sitting comfort
- 無需調整插座 No socket adjustments required
- 提高生活質量 Improved quality of life
- 冷/暖溫度（出汗/收縮）無影響
No effect from warm/cold temperatures (sweating/shrinkage)

缺點和風險 Disadvantages & Risks

- 大手術的風險（使用麻醉的並發症）
Risk of major surgery (complications with anesthesia)
- 手術的長度：第一次手術2小時，第二次手術為3-4小時
Length of surgery: 2 hours for 1st surgery and 3-4 hours for 2nd surgery
- 平均每兩年在皮膚穿入的部位有感染
Infection at skin penetration site, on average every 2 years

- 手術部位普通性的感染
General infection at surgical site
- 需長期的康復
Long rehabilitation
- 內植入物骨折就需要拆除
Fracture of inner implant which would require removal
- 外植入物的斷裂了可做外科來替換
Fracture of outer implant which can be replaced with surgical intervention
- 從皮膚穿入的部位有分泌物
Secretions from skin penetration site
- 骨整合手術的徹底失敗，這需要拆除和可能縮短骨
Total failure of osseointegration which would require removal and possible shortening of bone
- DVT（血塊）的風險
Risk for DVT (Blood Clot)
- 遲延不愈 Delayed healing
- 骨斷裂 Fracture at bone
- 深部感染可能需要服用3-6個月的抗生素，如果這不能清除感染，便要拔除植入物和可能要縮短剩餘的肢腿
Deep infection which can require 3-6 months of antibiotics and if this fail removal of implant and possible shortening of remaining limb
- 鄰接支座的皮膚需要日常護理
Daily care of the abutment skin area is required
- 死亡 Death