

Free Knee vs SAKL: the difficult decision

Kim Ryder¹ and Louise Tisdale²

1: Clinical Lead Physiotherapist, Shrewsbury and Telford Hospitals NHS Trust

2: Clinical Specialist Physiotherapist, Maltings Mobility Centre, Wolverhampton

Which patient groups are we talking about today

How do we define 'the lower activity' transfemoral patient ?

3 different mobility grading systems in common use

SIGAM: uses distance and the use of walking aids to grade users (an algorithm in its purest form)

A Codes / K codes (the same !): uses the ability to vary walking speed (cadence) and the ability to overcome environmental barriers to grade users

These systems are not exactly interchangeable

SIGAM Mobility Grades

A: non limb user: Those who have abandoned the use of an artificial limb or use only non-functioning prostheses (e.g. cosmetic limb)

B: Therapeutic: Were prostheses ONLY in the following circumstances: for transfer, to assist nursing, walking with the physical aid of another OR during therapy

C: Limited / Restricted: Walks up to 50m on even ground with or without walking aids a= frame, b = 2 sticks / crutches, c = 1 crutch / stick, d = no walking aids

D Impaired: Walks 50m or more on level ground in good weather with walking aids a = 2 sticks/crutches, b = 1 stick/crutch

E Independent: Walks 50m or more without walking aids except to improve confidence in adverse terrain or weather

F: Normal: normal or near normal walking

A (K) Codes

A0L: user does not wear a prosthetic limb

A1L: User has the ability to use the prosthesis for transfers or walking on level surfaces for short periods of time. Typical of the prosthetic demands of a limited household / cosmetic user

A2L: User has the ability to use the prosthesis for walking on uneven surfaces or to overcome low-level environmental barriers at a fixed cadence. Typical of the prosthetic demands of a limited community or household user

A3L: User has the ability to walk / move with variable cadence. This is typical of a user who has the ability to overcome many environmental barriers and may engage in vocational or leisure activities that demand prosthetic utilisation beyond simple locomotion. Typical of the prosthetic demands of an active adult

A (K) codes cont ...

A4L: User has the ability or potential for prosthetic walking needs that exceed basic walking skills, exhibiting high impact stress or energy levels. Typical of the prosthetic demands of a very active adult or athlete

Extra contractual activity: specialist sports limb, high definition silicone cosmeses and silicone restoration including digits and C-legs.

So we are talking about ...

- **SIGAM C and D:**
 - Up to 50m
 - mainly level surfaces
 - Use of a walking aid (frame, 2 sticks, 1 stick)
 - Limited outdoor mobility
- **K1 and K2:**
 - Household or limited community use
 - Fixed cadence
 - Low level environmental barriers
 - Unlikely to be able to engage in active leisure / vocational use

Split into 4 group: mix of experience

- Split into 4 groups: mix of experience and professions please
- 3 sheets of flip chart paper
- Consider and list indicators / reasons for
 - SAKL
 - Free knee
 - When the decision is difficult – how do you make this decision ?

Feedback : Indications for SAKL

- Transfemoral fitting predictor TFFP (? esp. questions 7 and 8) successful with locked knee vs free knee setting
- Patient choice
- Low pre amp mobility – high dependence on walking aid for extended period of time.
- Cognition problems – the skills to walk vs the skills the free knee. Lacking insight into requirement of Free Knee use
- To manage the Environment e.g. steep slopes, uneven grass, steps ; home , leisure or work. 4-legged pets and small children.
- Lower level of commitment / motivation/ attendance (inc terminal diagnosis)
- Leg home quick (inc terminal diagnosis)
- Predicted mobility grade (lower end within the mobility and activity grades predicted)
- Protuberant distal femur / distal femoral pain
- Poor strength/ROM in remaining leg - more likely to give way/mechanical disadvantage (neuro/orthopaedic problems/diabetic neuropathy)
- Poor vascular condition of the remaining leg

Feedback : Indications for SAKL

- ? Poor balance and proprioception (e.g. for donning)
- History of falls.
- Poor exercise tolerance long term pre amp and post op.
- Inappropriate risk taker
- Short residuum/ poor control range of movement / poor control of range of movement
- Unlikely to cope with the additional weight of free knee unit

Feedback: Indications for Free Knee

- Full scores TFFP (esp questions 7 and 8)
- Successful trial of Femurett on free-knee setting
- Ability to concentrate and learn new information, good carry over of skills and knowledge acquired.
- High level of commitment to regular physiotherapy
- ? Limited hand function (e.g. RA) who would struggle with the knee lock release on SAKL, UL Amputation
- Patient choice, goals supported by free knee use.
- Good carer/ family support to enable increased skill development
- Good attitude to risk
- Full ROM + through range control of hip movements (knee and foot will be heavier), good length of residuum. Good balance and proprioception
- Successful use of trial knee (if don't fit the femurett: short, weight limit)
- Prescription guidelines (top end of the lower mobility and activity grade- could be the next level)
- ? Seizures – ability for controlled lowering

Those for who the decision is difficult

- Trial of femurett on both knee options: consistency in // bars and with walking aids, patient confidence.
- Patient choice- a strong demonstration of a desire for one over the other and understanding and acceptance of effect on outcomes of choice. (Counsellor involvement)
- Patient goals , a good understanding of the patient in terms of requirements of ADL (OT assessment) ; habits, routines, home, garden, work, leisure
- What is the family support available, understanding of implications of choice on degree of support needed.
- Length of residuum, control of hip movements
- Trial knees (in physio sessions only)
- Cognition – involve MDT
- Repeated assessments over a period of time: redo OMs like TFFP
- Prescription guidelines if present
- Commitment to therapy (attendance record)

Additional considerations

- The Knee-ds of the K2 Transfemoral Amputee- Stevens (2012). 1 week trial of addition of knee lock on established free (3/12) knee users
 - Free knee preference for younger patients- “more natural to the patient”
 - Faster walking with a locked knee. Improved management of environment.
 - Will the patient reach A3?
 - HOKL an appropriate choice home (locked)/ therapy (free)
- Cumming et al 2015 - Cochrane review – (update 2005 review- 1 new paper) Older dysvascular TFA prefer a lighter weight but it does not change gait speed.
- NHS England Draft Guidance- indications for an MPK- K3 or K4 active walker with a free knee SIGAM D. or K2 bilateral amputee mobilising with free knees or stubbies.

The BWS Prosthetic Prescription Guidelines (PPG)

awaiting final ratification once NHSE MPK guidelines finalised.

Permission to share the BWS PPG given 12/3/2015 BWS Centre Managers meeting.

- A1L-A2L SIGAM B-C
- OttoBock 3R40
- Otto Bock 3R33
- Endolite Compact SAKL
- A3L-SIGAM D
- Mediknee NOP4 (Steeper)
- Total Knee 2000 (Ossur)

SAKL

Free

The PPG acknowledge that there is a discussion re free safety knees for high A2L. “free vs SAKL to be proven- identified by Physiotherapists and Prosthetists, follow the patients’ progress, record outcomes, to try to ascertain which patients they are” Variance a maximum of 20% i.e. 80% minimum adherence. Use of the Femurett is recommended.