



TECTUS®

**EMBRACE
THE
NEXT
STEP**

Embrace The Next Step

Tectus® is a slim, lightweight microprocessor controlled orthotic device. This life changing technology allows people with impaired mobility due to partial paralysis in their lower limbs to regain their mobility and walk again.



Superior Comfort

Tectus® is small and lightweight. At just 732g, the modular design allows comfortable and flexible positioning to accommodate any thigh size.



Enhanced Safety

We believe in safety by design. Tectus® is clinically proven to reduce trips and falls, decrease fatigue whilst walking and improve mobility¹. Our features put safety first - from superior battery life to intelligent standing support.



Pioneering Technology

Designed with unique Performance Response Technology (PRT™) from Blatchford, Tectus® achieves new levels of biomimicry. The unique combination of spring, hydraulic, sensor and microprocessor technology allows wearers to replicate a more natural walking gait, resulting in greater symmetry and more even loading¹.



Unrivalled Support

Practitioners can count on full support from Blatchford. Our certification programme covers the entire bracing journey and beyond - from initial evaluation to prescribing, programming, physiotherapy and follow-up.

1. Blatchford Tectus Case Study, May 2023, Document 1418.v1, Vanessa Walters



The Future of KAFOs

Gone are the days of little investment into smarter orthoses. We created Tectus® to be an innovative and accessible solution for people wanting to regain their mobility, opening up a whole new realm of life-changing possibility.

Now, wearers across the globe can walk more naturally and comfortably¹ with the cutting-edge microprocessor technology of Tectus®, with its super lightweight and compact design.

Discover the beneficial features of Tectus® below:

	TECTUS®	
Step over step	✓	
Swing control orthosis	✓	
Stance control orthosis	✓	
Controlled sitting/standing	✓	
Adjustable spring extension assistance	✓	
Stumble control	✓	
Lock function	✓	
Dynamic real-time control of gait cycle	✓	
Module weight	732g	
Position battery module anywhere on thigh	✓	
App control	✓	
Remote control	✓	
Handles uneven terrain	✓	

Performance Response Technology™

Tectus® uses Blatchford's Proprietary Performance Response Technology™ (PRT) to mimic the natural function of the knee joint, resulting in life-changing mobility.

The unique system of spring, hydraulic and sensor technology allows wearers to replicate a more natural walking gait.



Digital Display

The discreet digital display allows the wearer to view modes, battery status, step count and safety warnings at a glance.



Modular Design

Full customisation to each individual wearer. Position the battery unit anywhere on the thigh to fit any thigh size or unique limb shape.



Battery Life

Our fully rechargeable battery offers over 18 hours of continuous usage, and quick charges from 0% - 100% in under 2 hours.



Spring Assist

Unique adjustable control feature, assists both heel rise dampening and the mid to terminal swing phase knee extension



Minimally Invasive

Small and lightweight, the microprocessor module weighs just 732g, making it comfortable and minimally invasive.



Tectus® Modes

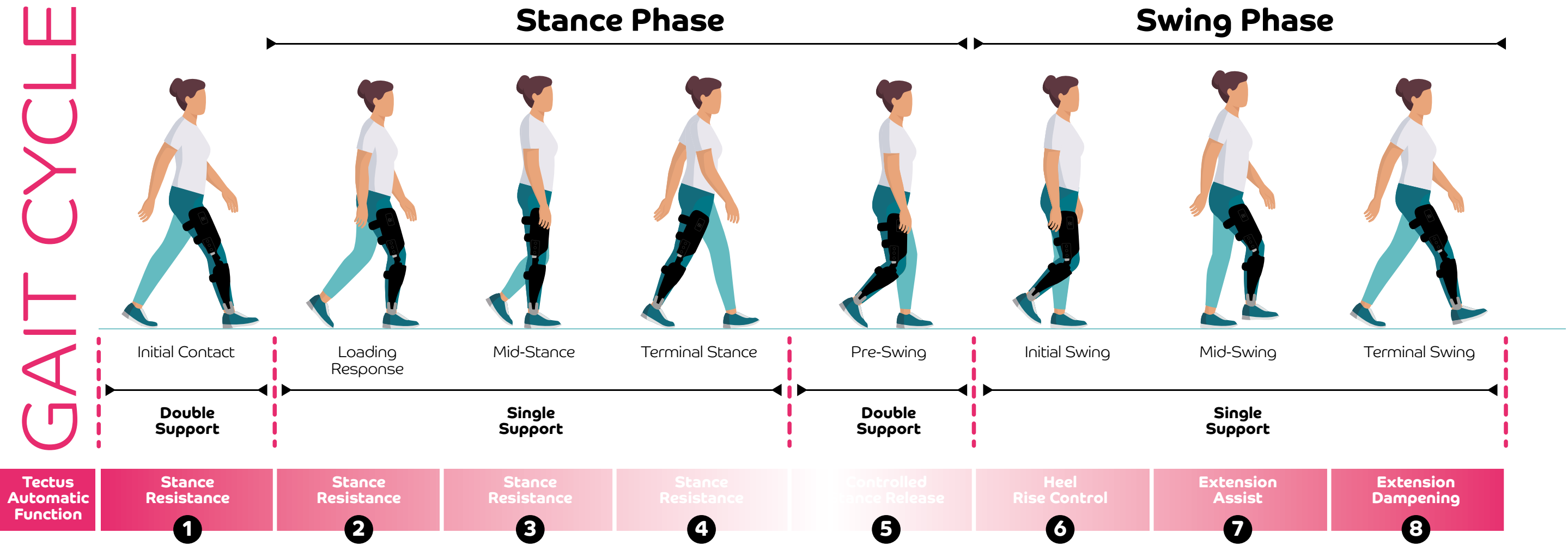
Across 5 operating modes, Tectus® has everyday activities covered. Wearers can go from descending stairs to standing in queues with ease. Change walking speeds, sit, stand, lock - it's all possible at the touch of a button.

Unlike other microprocessor KAFOs, wearers can switch between modes using a discrete remote control, or via buttons on the conveniently placed Tectus® module, giving wearers effortless and complete control.



Natural Fluid Walking

Tectus® automatically changes function for each stage of the gait cycle.



- 1. Initial Contact** – The hydraulic resistance provides support for safe walking, stabilising the affected limb and absorbing shock.
- 2. Loading Response** – The hydraulic resistance continues to provide support for walking.

- 3. Mid Stance** – The continued hydraulic resistance provides weight bearing support during the swing phase of the non-affected limb.
- 4. Terminal Stance** – The hydraulic resistance remains active for safe ambulation.

- 5. Pre-Swing** – Sensors detect the thigh angle, movement forward and pressure. The microprocessor controls the knee to release into swing phase.
- 6. Initial Swing** – Tectus uses microprocessor controlled hydraulic resistance and spring dampening to control heel rise.

- 7. Mid Swing** – The adjustable spring assist feature and hydraulic resistance controls the knee extension making the swing phase efficient with safe ground clearance.
- 8. Terminal Swing** - Hydraulic resistance dampens swing extension to ensure the limb is in a safe position for weight acceptance.

During the swing phases, the stumble control feature is active. Multiple sensors will detect a stumble and revert to high yield to stabilise the wearer.

Data and Movement

The **Gait Visualiser** is a feature within the Practitioner App that allows video footage of the **Tectus®** wearer walking, sitting, or standing in any environment, to be overlaid with synchronised sensor data. This can be used for evidencing wearer capability and improvements, data collection or providing an insight of what the sensors are telling the software at any given time or situation.

Key Benefits to the Clinician

- Allows the practitioner to analyse data and programme the optimum gait for the wearer to achieve the most optimal function whatever the situation, indoors or outdoors.
- Full flexibility of the video footage, allowing the practitioner to slow down and view events in detail to better understand what is happening and when – this will allow them to identify any potential adjustments that are required or what aspects of the wearer's gait they need to work on.
- The practitioner will be able to capture and evidence the wearer's progress from initial fitting, supporting medical claims with insurance companies.
- A visualisation tool to understand exactly what is happening with wearer and device, allowing issues to be quickly identified and rectified irrespective of the location.

Better Outcomes for the Wearer

- The wearer can be shown footage of them wearing the device along with sensor data, helping them better understand how the device functions and what (if anything) they need to do to further improve this.
- The wearer can be confident that they will achieve the most optimum gait possible.
- Any changes in product performance can be quickly identified and rectified.



“ Tectus® is well beyond my expectations. The difference in adding a microprocessor, essentially a computer, to my leg is mind-blowing. It almost feels like you're using your own leg again.

I finish every day with much more energy. I go into every situation with less planning and less anxiety.

I can just enjoy life rather than worrying about limitations. ”

Alex, Tectus® Wearer

Activity Modes

Delivering a more natural walking gait¹ and greater independence, **Tectus®** has 5 wearer activity modes. Wearers can go from descending stairs to standing in queues with ease. Change walking speeds, sit, stand, lock - it's all possible at the touch of a button, with an additional training mode for practitioners to train new wearers.

Tectus delivers confirmation beeps or haptic feedback to confirm the mode if they can't see the screen. Wearers have the option to turn on or off the confirmation beeps if they prefer.



Walk Mode

- Walking mode automatically provides support during stance and controlled release during swing.
- Tectus® will adapt to changes in the walking speed, allowing the wearer to vary their cadence.
- If the user stands still for a while in the walk mode, Tectus® will activate the standing support feature.
- If the wearer steps backwards the device goes into a lock mode preventing the knee from buckling. This gives the user support while they rebalance. When the wearer returns to a standing posture for one second, the walk mode re-engages.



Sit Mode

- Sit down and stand back up hands free. Tectus® provides complete control, so that the wearer will be supported to sit and rise easily.
- Sit mode provides appropriate supportive resistance when sitting.
- The device will detect when the user is fully sat down and will automatically change into free motion at the knee so the lower leg can be placed into a comfortable and preferred position for the user.
- The device will detect when the user attempts to stand and locks the knee against flexion and for those that require it, allows a ratcheting sit to stand motion.
- Tectus® reverts to walk mode when the user stands and starts walking.



Stairs Mode

- Stairs Mode provides appropriate resistance for descent of stairs, allowing 'step over step' leg motion.
- If the wearer is more comfortable with a locked knee for descending stairs they can select Lock Mode.



Manual Lock Mode

- The Lock Mode gives complete confidence in situations where prolonged periods of standing are required.
- The users can enable Lock Mode manually to prevent any knee flexion.
- This mode will remain active until another mode is manually selected.



Training Mode

- Training Mode is used by the Clinician or Physio when training the wearer to use Tectus®.
- This mode uses sounds to indicate when the correct posture is achieved, and walking can begin.
- This informs the Clinician when correct positioning and posture is achieved to ensure the wearer can utilise Tectus® to the best of their ability.



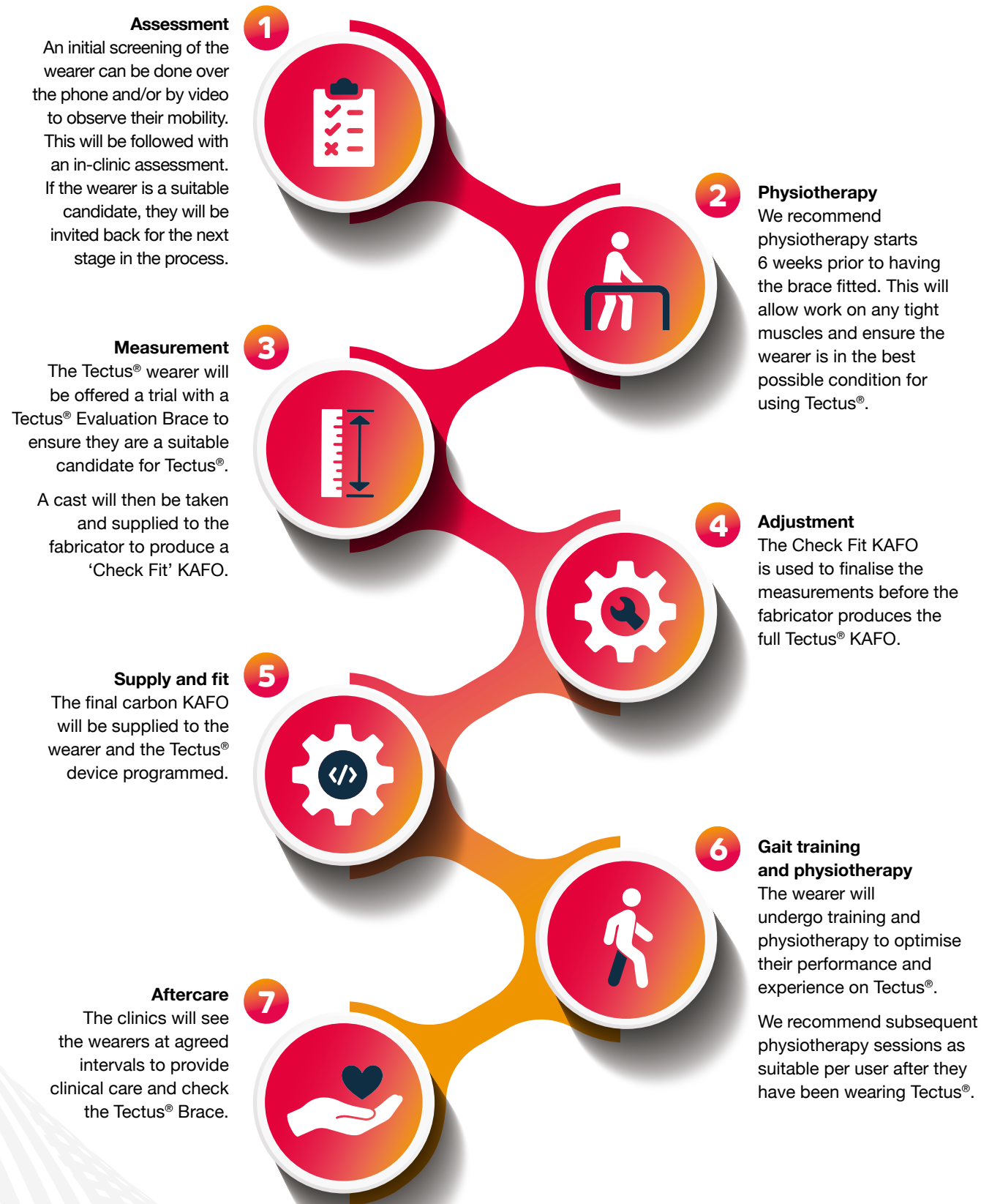
Free Mode

- Tectus® automatically activates free mode after sitting in resting position for two seconds.
- This allows free movement so that the wearer can position their leg and sit comfortably.

Tectus® delivers a 42% improvement in mobility, delivering decreased pain and more even loading¹.



The Process



Tectus® is warranted for 36 months and should be checked at 3 month, 6 month, 12 month, and 24 month intervals.



Selection Criteria

Tectus® has been developed for adults but could be suitable for teenagers. Unlike prosthetics, Tectus® wearers aren't defined by their activity level. It's their ability to meet the indications that will determine if the device is suitable for them.

Indications*

- Quadricep weakness
- Flaccid paralysis of lower limb
- Resultant paralysis from orthopaedic injury or procedure
- Insufficient knee control
- Spinal injuries
- Stroke wearers (mild tone only)
- Poliomyelitis
- Patient can initiate swing phase from their hip
- Hip flexion power 2+ (Oxford scale)
- The wearer can stand independently
- Minimum user weight 50kg
- Maximum user weight including carrying weight 100kg

Contraindications

- Unable to initiate hip flexion to initiate swing phase from muscle power or with compensatory movements
- Knee or hip flexion contracture greater than 10 degrees
- 10 plus degrees genu varus or valgus that can't be reduced
- Significant muscle tone/spasticity (mild can be managed)
- Compromised trunk control
- A leg length discrepancy more than 15cm
- Muscle conditions that prevent control of an orthosis including moderate or severe spasticity
- Lack of sensory or cognitive ability necessary to operate and perceive device controls and indicators respectively

*Every wearer will require evaluation by a Tectus® approved Orthotist.

“When I tried Tectus® I cried, it was like a revolution. All of a sudden I had freedom. It allows me to do all the things an able-bodied person can do but with this bit of kit on my leg.”

Alfie, Tectus® Wearer



FAQs

• What is Tectus®?

Tectus® is an orthotic device, that enables people with partial lower limb paralysis to walk more easily, naturally, and comfortably with increased confidence and safety.

Tectus® combines a custom-made Knee, Ankle, Foot Orthosis with the Tectus® knee module to create a microprocessor controlled KAFO with swing and stance phase control.

• How does Tectus® work?

The orthosis provides stability and support to the wearer. The Tectus® device uses its complex system of spring, hydraulic, sensor and microprocessor technology to enable natural walking.

The multiple sensors detect the wearer's movement and automatically makes adjustments to the knee unit. The hydraulic mechanism provides controlled resistance which ensures the wearer walks safely on different terrains and alters the resistance for stairs and sitting to give the wearer complete control.

The combination of the spring assist feature and the microprocessor-controlled hydraulics allows the wearer to walk further and more easily¹.

• What conditions can it be used to treat?

Tectus® can be effective in treating wearers with:

- Spinal injuries with lower limb paralysis
- Neurological conditions with resultant muscle weakness
- Orthopaedic injuries with resultant nerve damage.

• Is Tectus® the same as other KAFOs on the market?

No.

Tectus® is a unique, semi-automatic, microprocessor knee module that incorporates Blatchford's Performance Response Technology™ - a complex system of spring, hydraulic, sensor and microprocessor technology to improve the gait cycle of any Tectus® wearer. This results in a more natural walking gait, with improved symmetry and more even loading¹.

• What is the user weight limit for Tectus®?

Tectus® is designed for adolescents and adults. The minimum user weight is 50kg, Maximum weight 100kg* (*including any weight carried).

• What is the battery life of Tectus®?

Tectus® will last all day providing up to 18 hours of continuous charge.

• Is there a warranty for Tectus®?

The Tectus® module comes with a 36-month warranty.

• Is Tectus® waterproof?

The Tectus® module is IP54 rated. Being caught in the rain is not a problem, but the brace is not suitable for showering, paddling or being soaked in water.

• How long does it take to fully charge Tectus®?

Tectus® takes 2 hours to fully charge from a flat battery.

It is recommended before charging that you lay the Tectus® KAFO down in a horizontal position (on a flat surface or floor), with the knee module facing upwards and with 5 degrees of knee flexion so that it is secure and does not roll over.



“It's given me the confidence to get out and do things again.”

Mick, Tectus® Wearer

Technical

Technical Specification

Activity Level:	All Activity Levels
Minimum User Weight:	50kg/110lbs
Max User Weight:	100kg/220lbs*
Hip Flexion:	2+, Oxford scale
Component Weight:	Tectus® Module: 732g (1lb 10oz)
Battery Type:	Rechargeable Ni-MH 950mAh 6V
Time to Full Charge:	2 hours
Battery Life:	Approximately 1 day (18 hours of continuous usage)
Warranty:	36 months
IP Rating:	IP54

* Including carrying weight



Ordering Information

Please order:

TEC-L-KIT for left leg

TEC-R-KIT for right leg

These kits include all components required excluding ankle joint and KAFO brace materials.

USA reimbursement code: L2006.

Tectus® is protected by Patent No 2566310.

Multi-functional ankle joint shown is for illustrative purposes only.

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