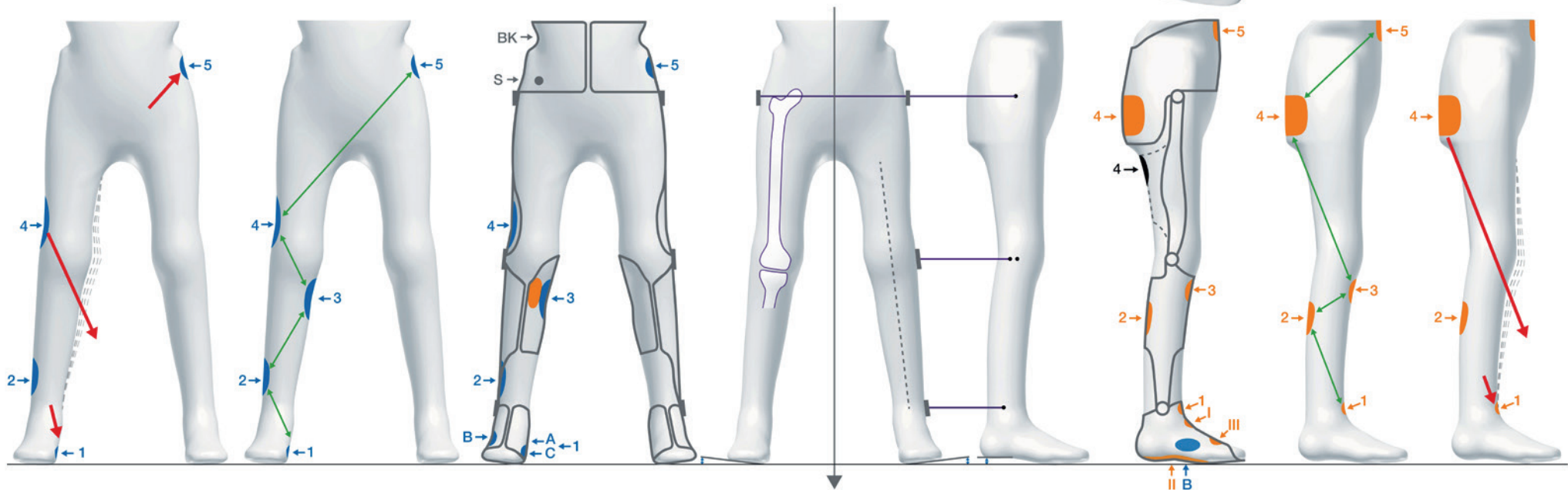
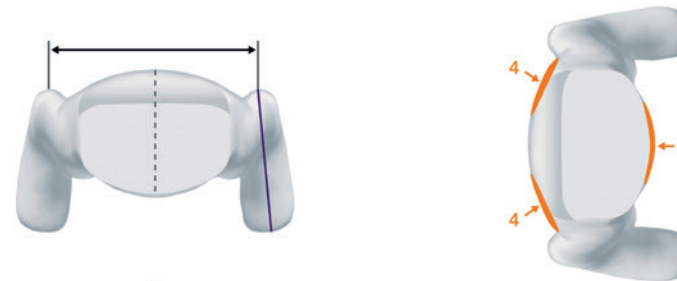


HKAFO – Proper Support with the 3-Point Pressure System



For a walking orthosis to effectively support and upright the skeleton, as well as guide and limit movement, the points where it transmits force to the body are crucial. Three-point pressure systems – two forces acting in one direction and a third in the opposite – stabilize and guide a body part effectively. These systems work in tandem to align the leg, mirroring the way muscles wrap around and control the skeleton from all sides. Therefore, it is strongly recommended to use circular cuffs, not half-shells, to fully enclose the leg. Straps should be used only as a closure and not as a structural support point.



Loss of contact point 3: ineffective standing and walking

Contact points 3, 4 and 5 guide the hip joint.
2, 3 and 4 guide the knee joint.
1 (A, C), 2 and 3 stabilize the lower leg and guide the ankle joint.
A, B and C secure the foot.

BK = pelvic crest profile facilitates lifting of leg
S = Anterior superior iliac spine remains above the trimline to protect against pinching

Keeping the foot in alignment with the leg axis takes advantage of the slant under the sole to facilitate tilting and step initiation.

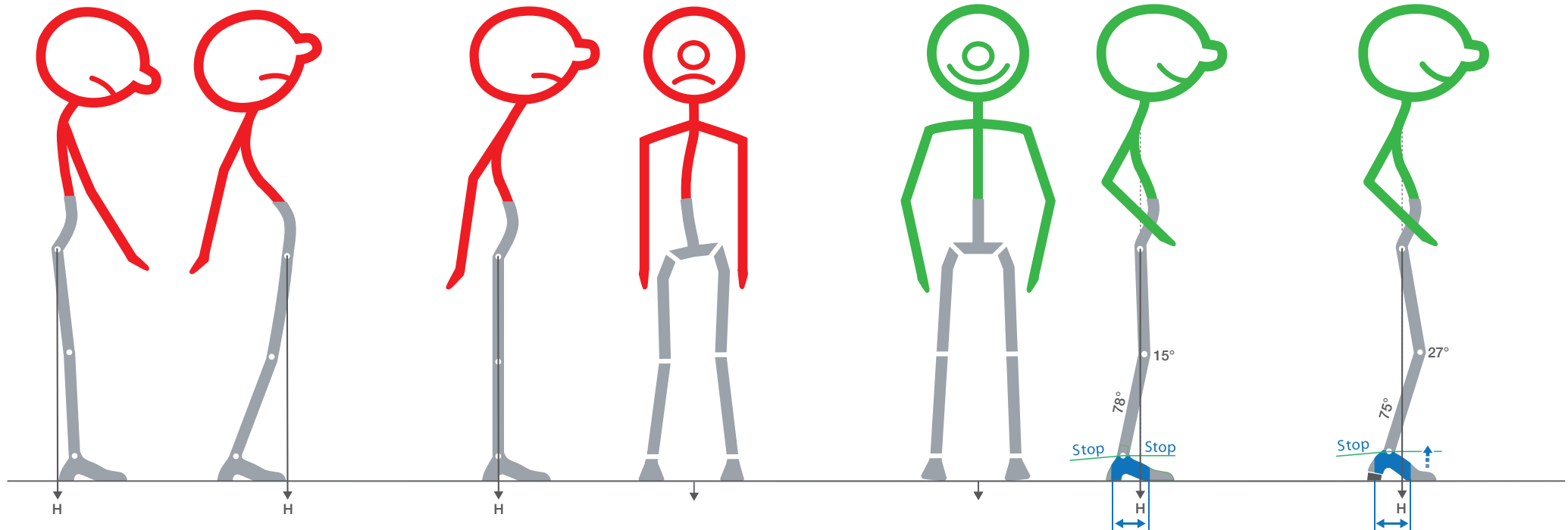
Step width must be adapted to user requirements. Increased width improves stability, while reduced width enables a longer step length.

Contact points 3, 4 and 5 guide the hip joint and support the pelvis.
2, 3 and 4 support knee extension when increased flexion contractures are present.
2, 3 and 4 guide the knee joint.
1, 2 and 3 stabilize the lower leg.
II, 1 and 2 guide the ankle joint.
I, II and III secure the foot.

Loss of contact point 3: ineffective standing and walking.

HKAFO – Walking Starts with Standing

For an efficient fitting, we recommend using the hip line as a reference. In a balanced stance, the shoulder is usually in line with the hip. Patient-specific fine-tuning is necessary for secure standing and efficient gait.



Hip line (H) falls outside area of support

Shoulder does not fall in line with the hip.
Secure and free standing cannot be achieved.

Due to the unstable stance, gait initiation is difficult or impossible.

Hip line (H) too far posterior

Pelvic tilt caused by either contrasting flexion angles of the hip, knee and foot or an uncompensated leg length discrepancy. Knee valgus may be due to hip rotation.

Imbalance leads to differing step lengths and increased energy expenditure. Distance user can walk is thereby diminished.

Horizontally aligned pelvis ensures secure standing. To facilitate step initiation, feet rest on the medial edges (in line with the leg).

Enables uniform, smooth steps.

Hip line (H) falls within area of support

Double-action ankle joints. Patient stands resting on dorsiflexion stops.

At initial contact ankle joint plantarflexes.

Double-action ankle joints with dorsiflexion assist. Patient stands resting on dorsiflexion stops. Flexion contractures in the hip, knee and ankle joints are taken into consideration.

At initial contact ankle joint plantarflexes. During swing phase foot is lifted to the dorsiflexion stop.