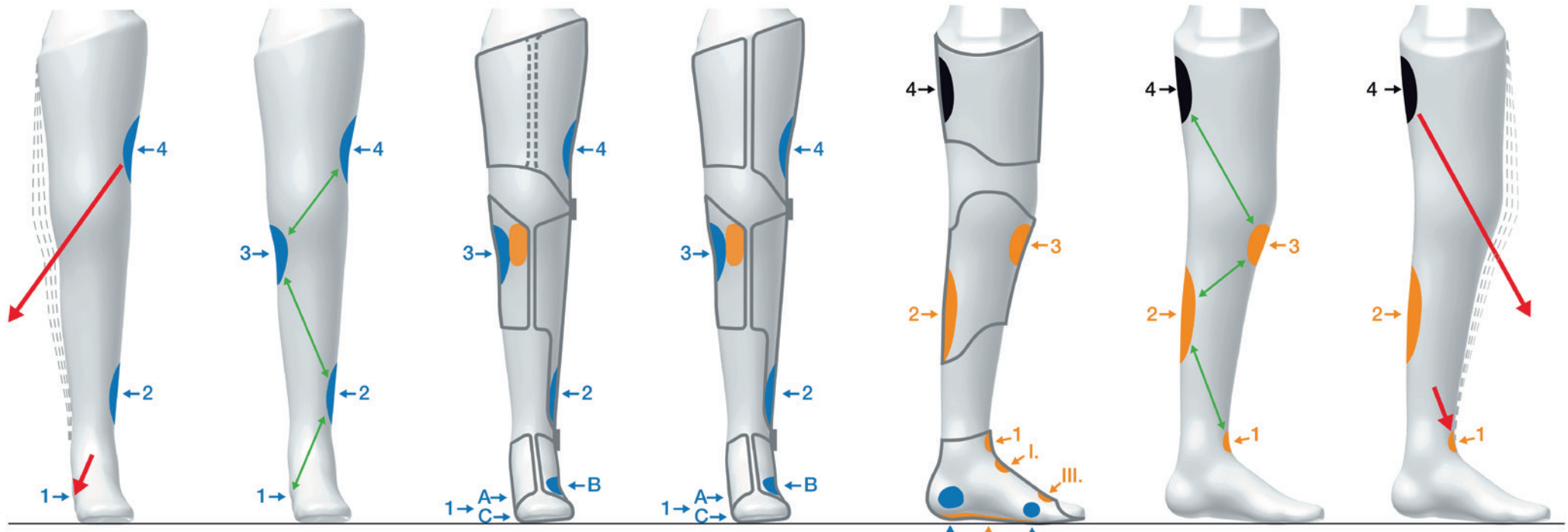


KAFO – Proper Support with the 3-Point Pressure System



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 to fully enclose the leg. A half-shell can only provide real support on three sides, thereby neglecting essential contact points. Straps should be used only as a closure and not as a structural support.



Loss of contact point 3:
ineffective standing and walking

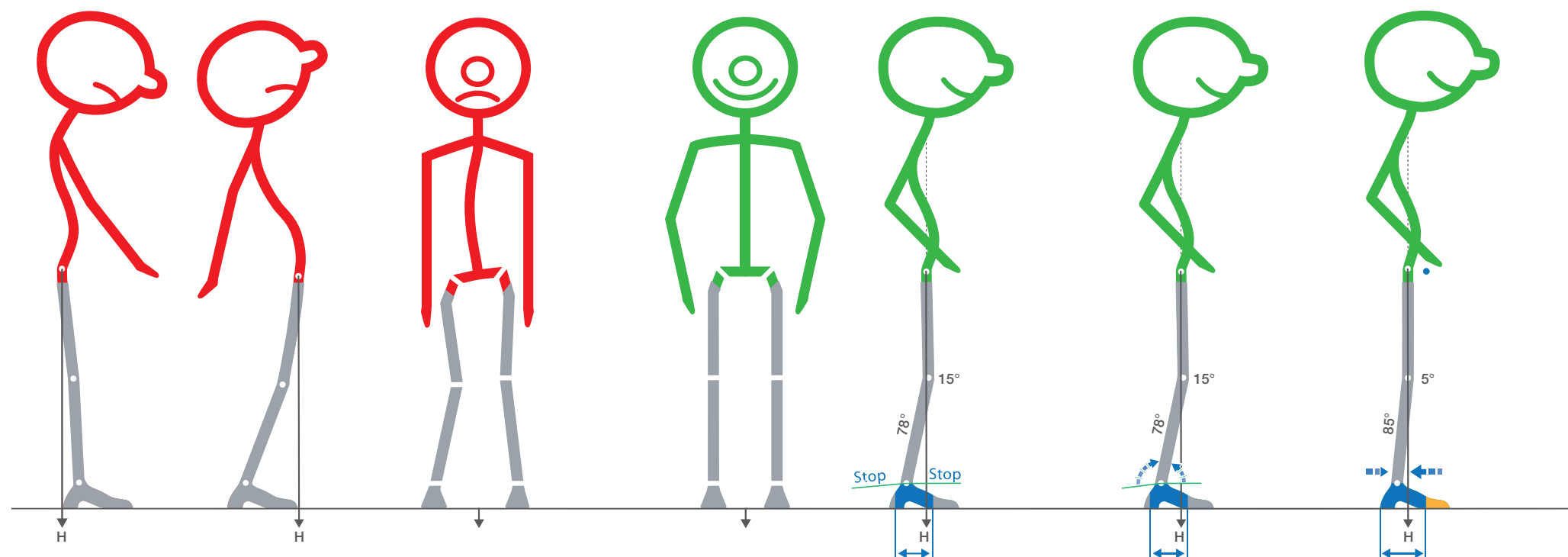
Contact points 2, 3 und 4 guide the knee joint.
1 (A, C), 2 and 3 stabilize the lower leg and guide the ankle joint.
A, B and C secure the foot.

Contact points 2, 3 and 4 support extension when using a locked knee joint or extension assist.
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.

KAFO – 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. The below examples assume KAFOs worn on both legs. 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.

Center of gravity off-center

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.

Center of gravity correctly aligned

Horizontally aligned pelvis ensures secure standing.

From this position, ankle joint movement can only take place in direction plantarflexion.

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 mild spring forces. Patient stands resting on dorsiflexion stops.

At initial contact ankle joint plantarflexes. Gait is supported with light or mild forces.

Dynamic ankle joints with power units enable upright standing.

Ankle joint movement is achieved by shifting the center of gravity during stance phase.