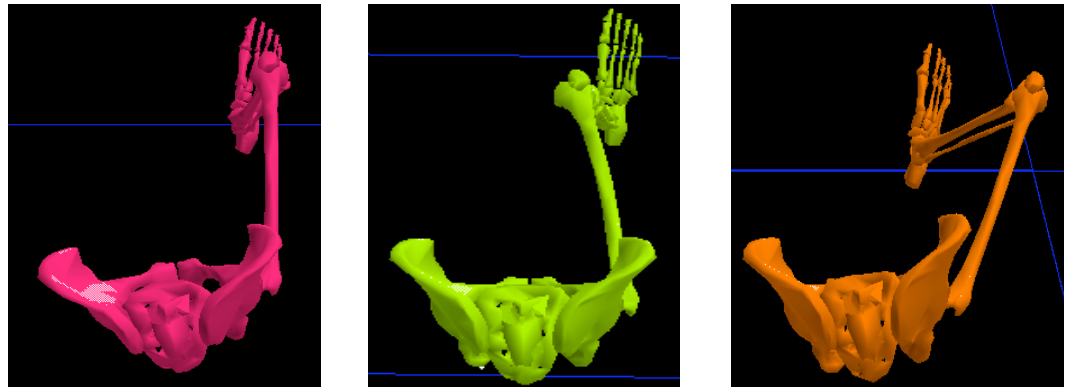




A LEG STABILIZATION DEVICE IMPROVES POSITIONING OF THE LOWER EXTREMITY DURING NUSTEP ERGOMETRY

- ALTHOUGH THE NUSTEP RECUMBENT CROSS TRAINER PROVIDES A SAFE AND EFFECTIVE MODE OF EXERCISE, PERSONS WITH LOWER EXTREMITY (LE) HEMIPARESIS OFTEN HAVE DIFFICULTY MAINTAINING A NORMAL LE ALIGNMENT DURING PEDAL STROKES. SUCH MISALIGNMENT ADVERSELY AFFECTS THEIR ABILITY TO EXERCISE EFFECTIVELY ON THE ERGOMETER. THE PURPOSE OF THIS PROJECT WAS TO EXAMINE THE EFFECT OF A LEG STABILIZATION DEVICE DESIGNED TO IMPROVE LE ALIGNMENT DURING ERGOMETER USE.
- TO DETERMINE IF A LEG STABILIZATION DEVICE IMPROVED LE ALIGNMENT DURING PEDAL STROKES, PERSONS WITH LE HEMIPARESIS RODE THE ERGOMETER WITH AND WITHOUT THE LEG STABILIZATION DEVICE WHILE THEIR LE KINEMATICS WERE RECORDED WITH A VICON MOTION CAPTURE SYSTEM.

RESULTS:



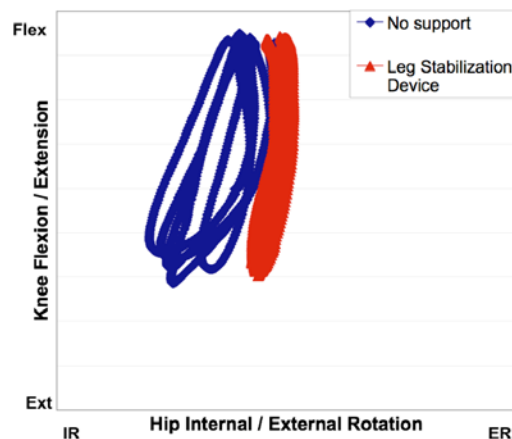
- LOWER EXTREMITY STATIC ALIGNMENT OF A REPRESENTATIVE PARTICIPANT WITH THE LEG STABILIZATION DEVICE IN PLACE (PINK SKELETON) COMPARED TO NO SUPPORT CONDITIONS (GREEN AND ORANGE SKELETONS).



PROJECT PERFORMED BY:

LEE DIBBLE, PT, PHD
ANDREW WARD
BO FOREMAN, PT, PHD

UNIVERSITY OF UTAH
DIVISION OF PHYSICAL
THERAPY
WWW.HEALTH.UTAH.EDU/PT



- HIP AND KNEE KINEMATICS DURING 10 PEDAL STROKES OF A REPRESENTATIVE PARTICIPANT WITH THE LEG STABILIZER IN PLACE (RED TRACING) COMPARED WITH PEDAL STROKES IN THE NO SUPPORT CONDITION (BLUE TRACING). NOTE REDUCED HIP INTERNAL ROTATION EXCURSION AND CONSISTENCY OF MOVEMENTS WHEN THE LEG STABILIZER WAS USED.