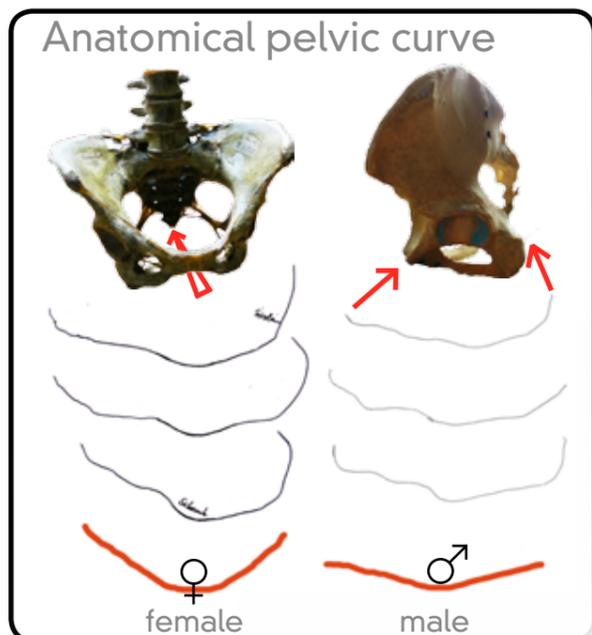


NewMove - A bike seat specifically for women

Diploma project by Katharina Bernstein, industrial design

mentoring: Prof. Hartmut Ginnow Merkert at the khb Berlin 2010



3D model NewMove

The **right angle (90°)** in the shoulder joint avoids an arched back and enables an unhunched, relaxed position, particularly in the shoulder and neck region. Often the **distance** between the **handlebar** & the **saddle** is too short. The cyclist pushes her shoulders up or her back rearwards, causing all stress to run into the hand joints. Furthermore the distance now feels too long - a dangerous illusion! The optimal distance should enable a right angle (90°) in the shoulder joint.

With a straight back and a right angle the weight on the hand joint is just 10% to 20%, because torso muscles can work.

The knees should not bend at an **angle** smaller than **90°**, as this it damages the articular cartilage and prevents an optimal load transmission. This means the **saddle height** must be high enough that the heels do not reach the pedals. If the body slips sideways to complete a pedal rotation, then the saddle is probably too high.

Healthy bicycle-geometry

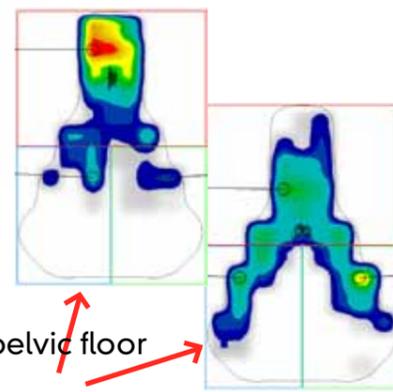
- muscular activity
- surface, pelvis needs
- knee plumb line
- important distances

The larger the contact surface, the lower the **pressure**.

distribution of pressure on **NewMove-saddle**



pressure distribution on a **standard saddle** with weak and strong pelvic floor muscles:



Only a straight spine can perform its protective functions consistently.

Only if the geometry of the bike is suitable, will the saddle be able to facilitate the straight spine position.

This saddle requires the cyclist's particular attention. Sitting properly on a bike must be learned anew and in the first weeks the angle of incline must be adjusted frequently until it suits the cyclist properly.

After a weeks acclimatization the reduced pressure in the lumbar spine and the absence of bruising in the nether regions are noticeable and the rider gains more power due to uncurling of the whole body.