



The cross sectional area of the quadruple hamstring graft correlates with the size of the donor.

Aune, AK og Nordsletten, L.

Volvat Medical Centre and Orthopaedic Centre,
Ullevaal University Hospital, Oslo, Norway.

Introduction



- When harvesting a ST-G graft for ACL reconstruction, the amount of tissue you get is what *the donor provides*.
- When using an allograft or PTB, *you can choose* the amount of tissue you need to replace the ACL.

Important parameters in graft morphometry



- **Graft length- sufficient for fixation**
- **Cross sectional area – stress distribution**

Hypothesis



There is no correlation between the size of the donor and the length and cross sectional area of the graft.

METHODS



- **30 ACL reconstructions using ST-G grafts.**
- **Height, weight of the patients.**
- **Length of the trimmed tendons.**
- **Diameter of the central part of the prepared graft.**
- **Cross sectional area.**
- **Any correlation between graft size and donor size was evaluated using regression analysis.**

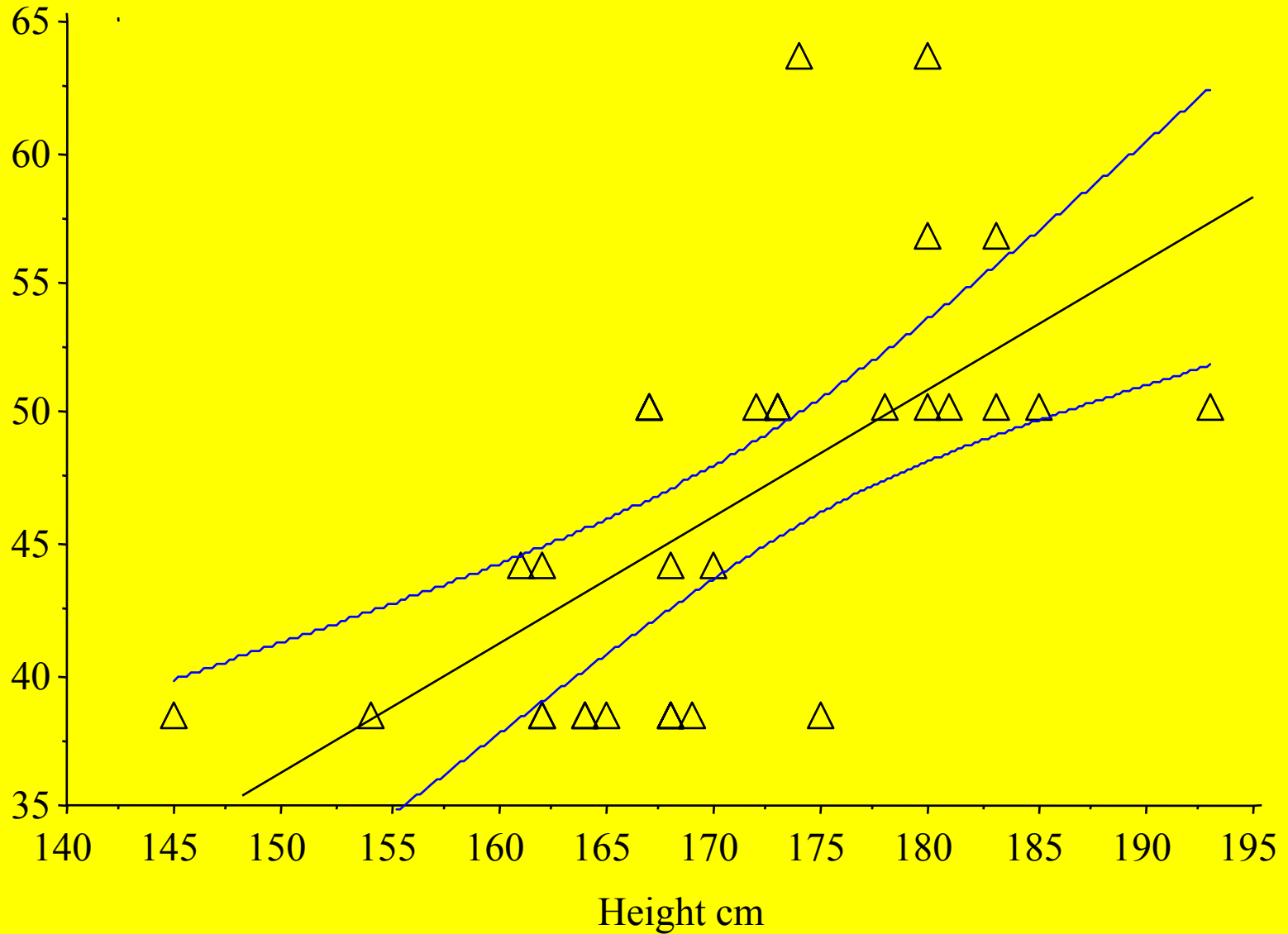
RESULTS



	Age	Height	Kg	Gracilis	Semi T	Graft diameter	Cross sectional area
Mean	32	171 cm	71 kg	22,0 cm	25,13 cm	7,67 mm	46,46mm ²
SD	11,91	10	14	2,53	2,51	0,67	7,61

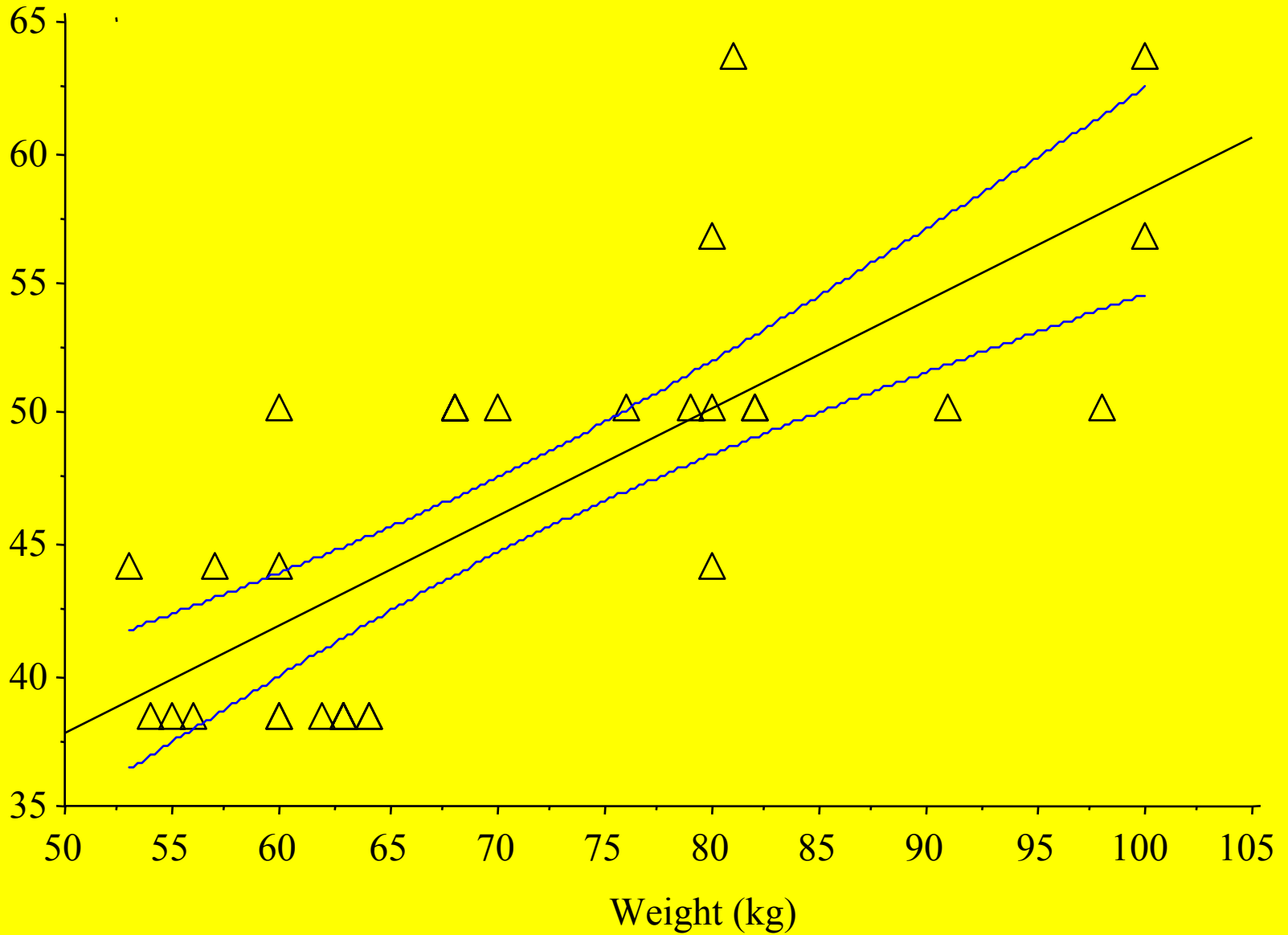
$$y = .49x - 37.37, r^2=0.42, p = 0.0001$$

Cross sectional area (mm²)



Area (mm²)

$y = .42x + 16.95, r^2=0.58, p = 0.0001$





DISCUSSION (and philosophy)



- **The larger the patient is , the more load is distributed through the graft at a given activity.**
- **Graft stress is reduced with increasing cross sectional area.**



- **When using a hamstring graft, nature provides a product sufficient to fit the patient (Which we already knew from clinical results).**

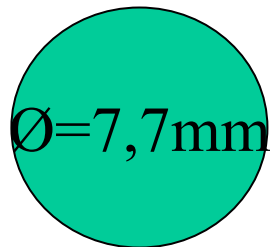
What about PTB cross sectional area ?



Your choice.

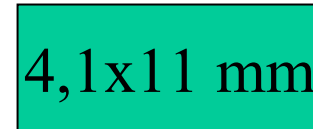


- **Mean depth of the patellar tendon = 4,1 mm.**
- **To equalize the mean cross sectional area of the hamstring graft in the present study you need to harvest a 11 mm wide PTB graft.**



ST-G

=



PTB