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Background & Aims

Recombinant growth hormone (rGH) therapy decreases final height deficit in girls with Turner's Syndrome (TS) and is particularly effective when commenced early. In a proportion of girls, TS is diagnosed late and so vital years of growth hormone therapy are lost.

Aims:

- 1) To evaluate skeletal disproportion in untreated girls with TS
- 2) To assess the effect of karyotype on skeletal disproportion
- 3) To evaluate the effect of rGH and oestrogen replacement on skeletal disproportion at adult height.

Methods

Retrospective study of clinic data from the West of Scotland. Those with chronic disease potentially affecting growth were excluded eg. Coeliac disease, IBD, thyroid disease, malignancy.

Skeletal disproportion scores:

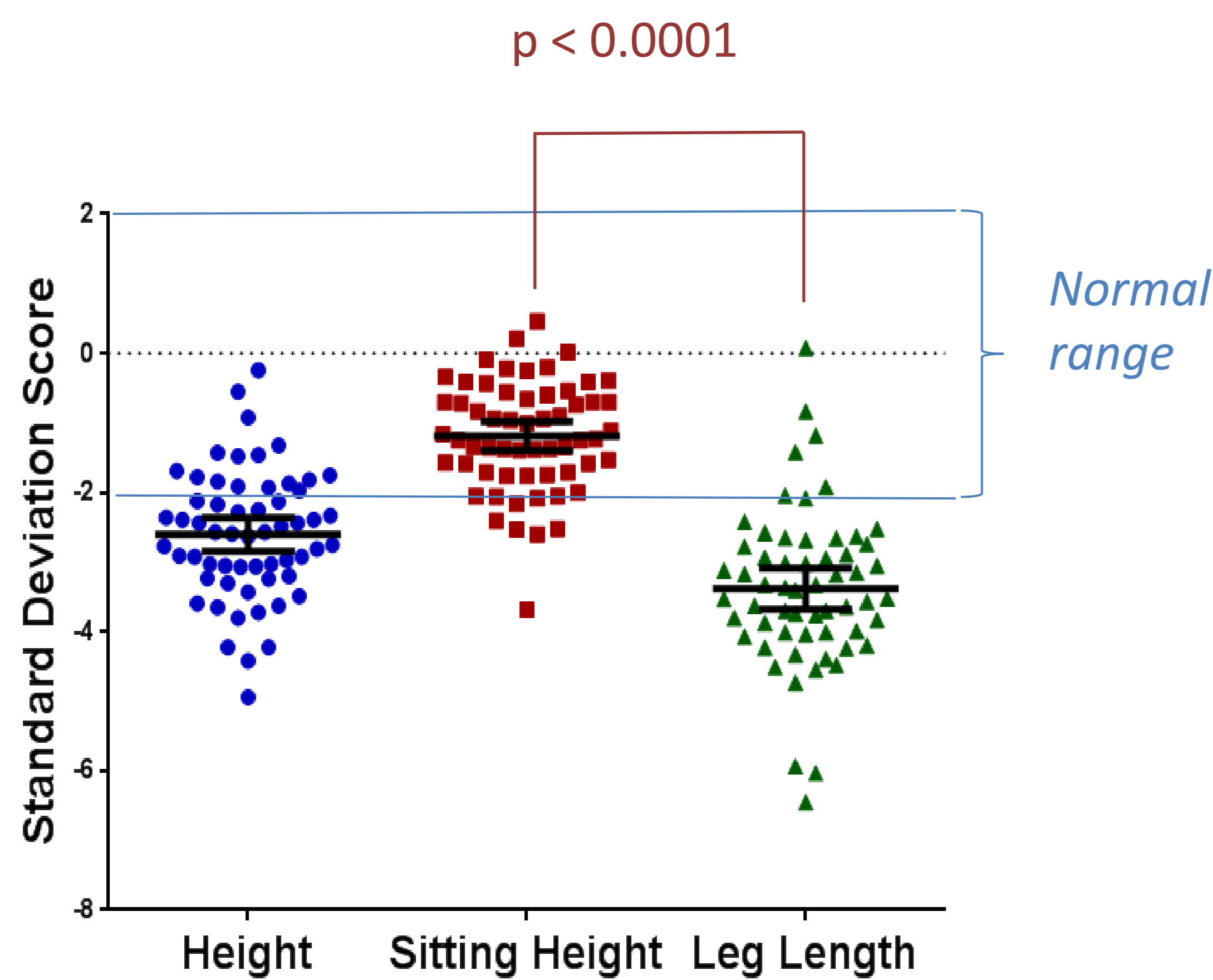
- 1) Sitting height standard deviation score (SDS) minus leg length SDS (StHt SDS – LL SDS)
- 2) Sitting height divided by height SDS (StHt/Ht SDS)

Results

Pre Growth Hormone

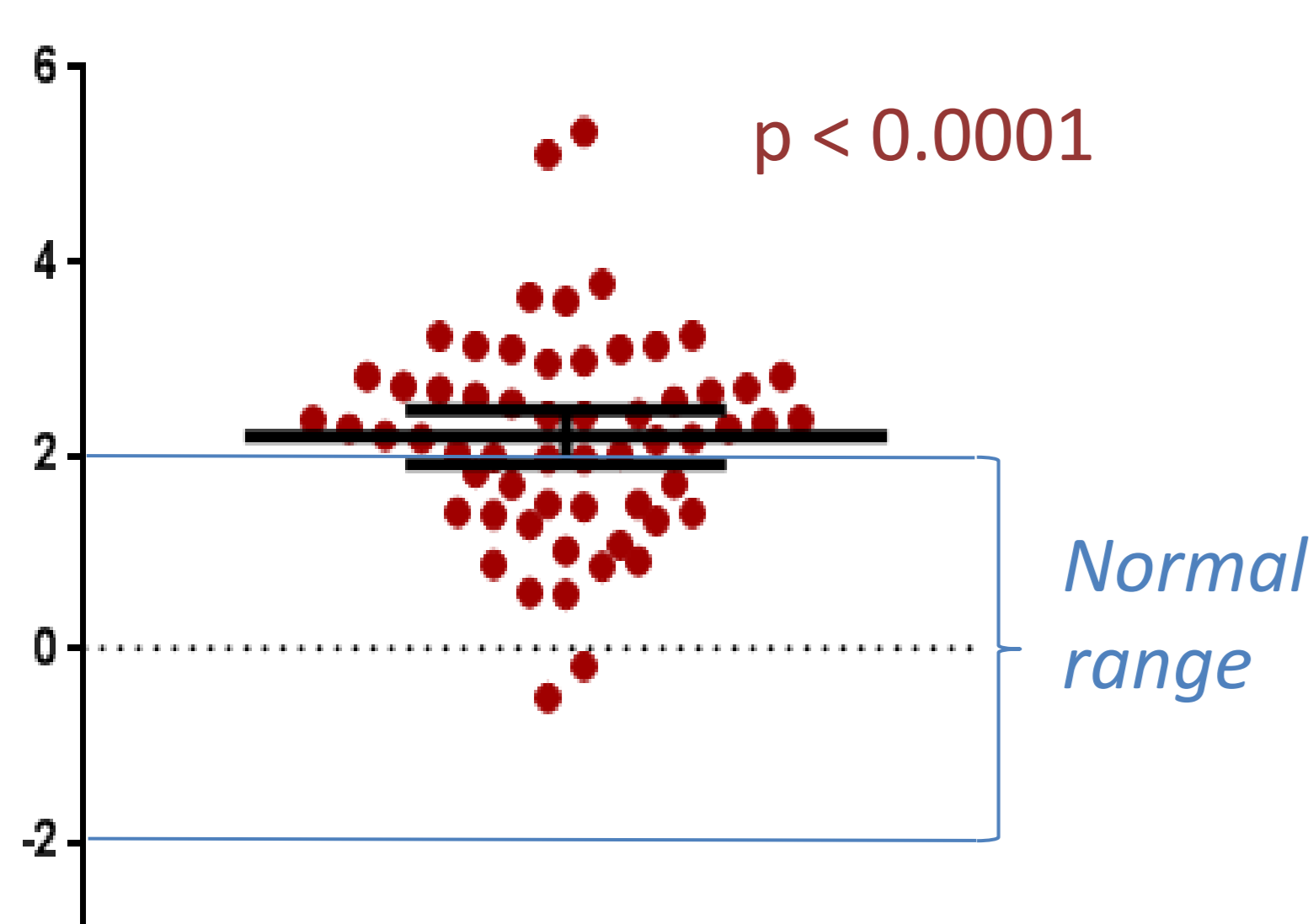
(n=59) age = 6.1 years (4.0 to 10.0) [median (range)]

SDS

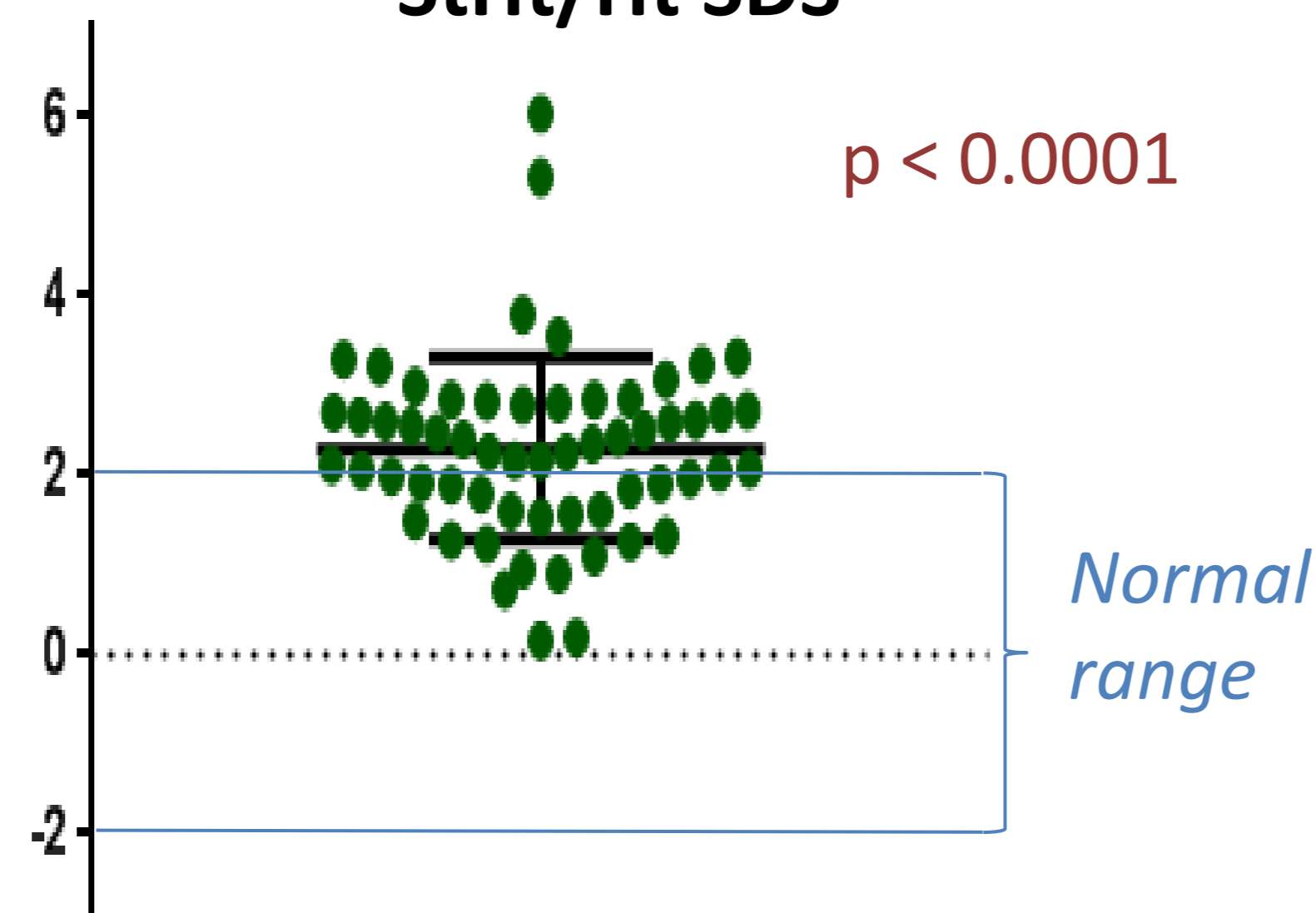


Disproportion scores

StHt SDS – LL SDS



StHt/Ht SDS

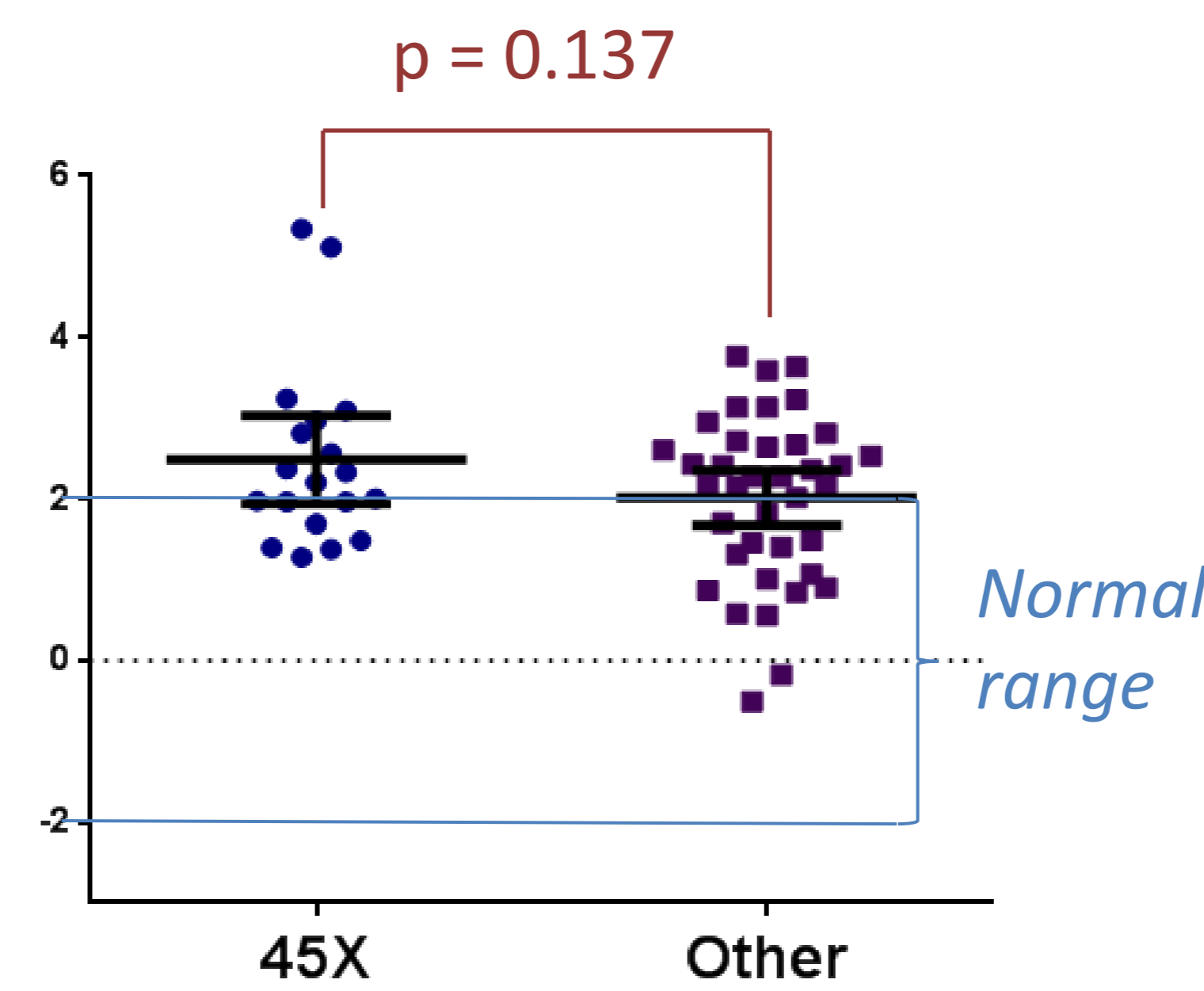


Karyotype

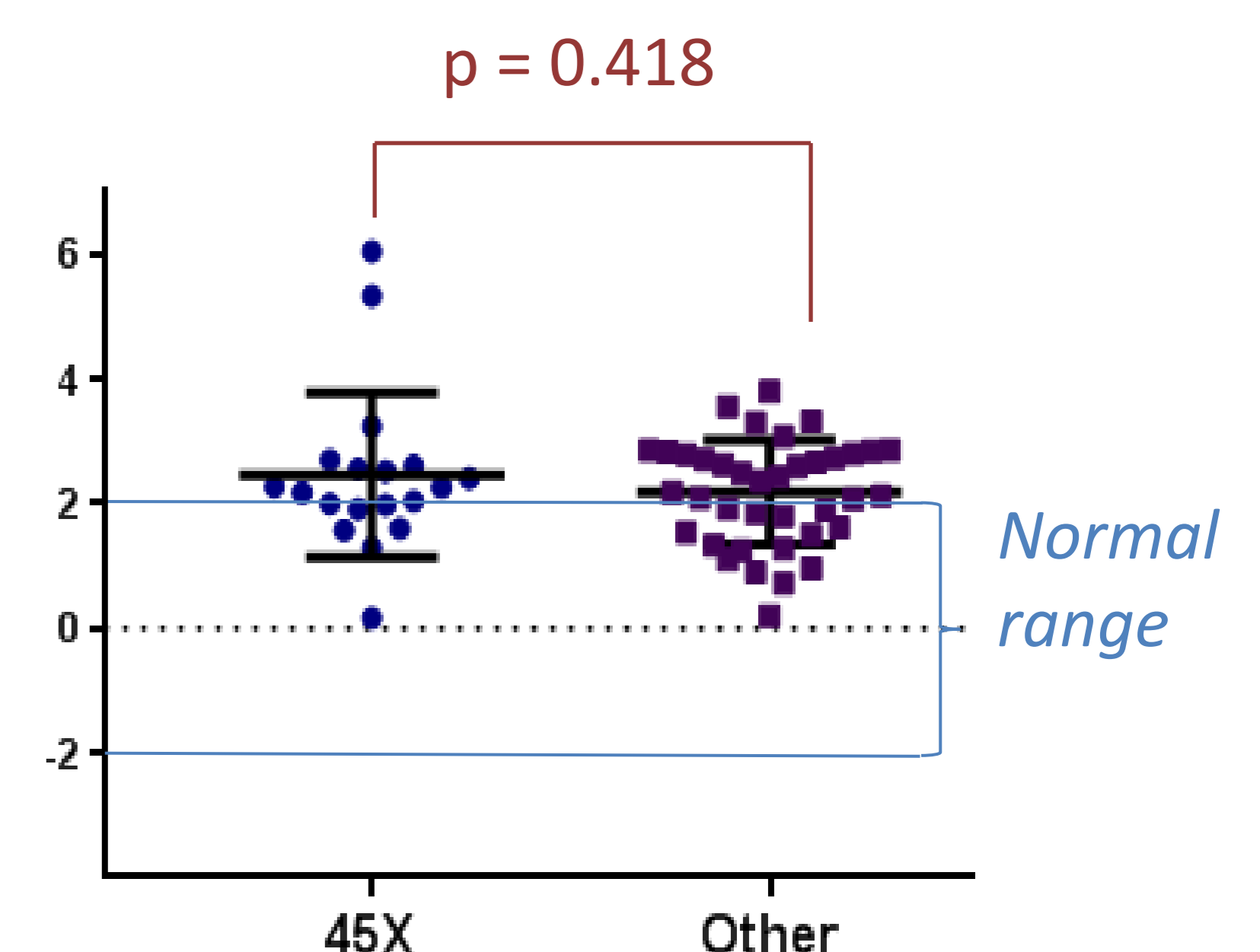
45X: (n=19), age = 5.2 years (4.1 to 10.0)

Others: (n=38), age = 6.8 years (4.1 to 9.9)

StHt SDS – LL SDS



StHt/Ht SDS



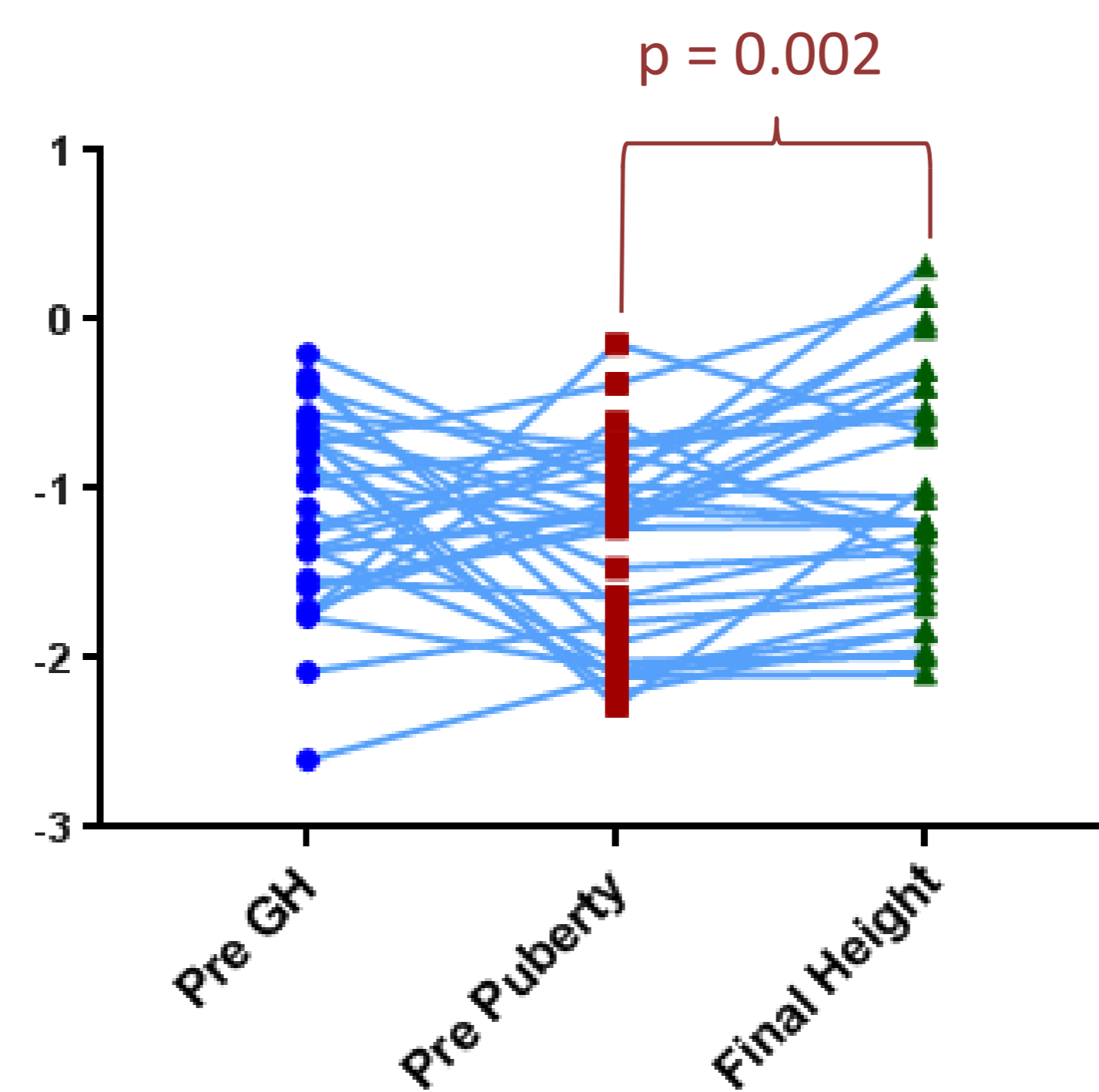
Serial Measurements: growth, rGH and synthetic oestrogen effect

(n=30) Pre growth hormone: age = 5.5 years (4.1 to 10.0)

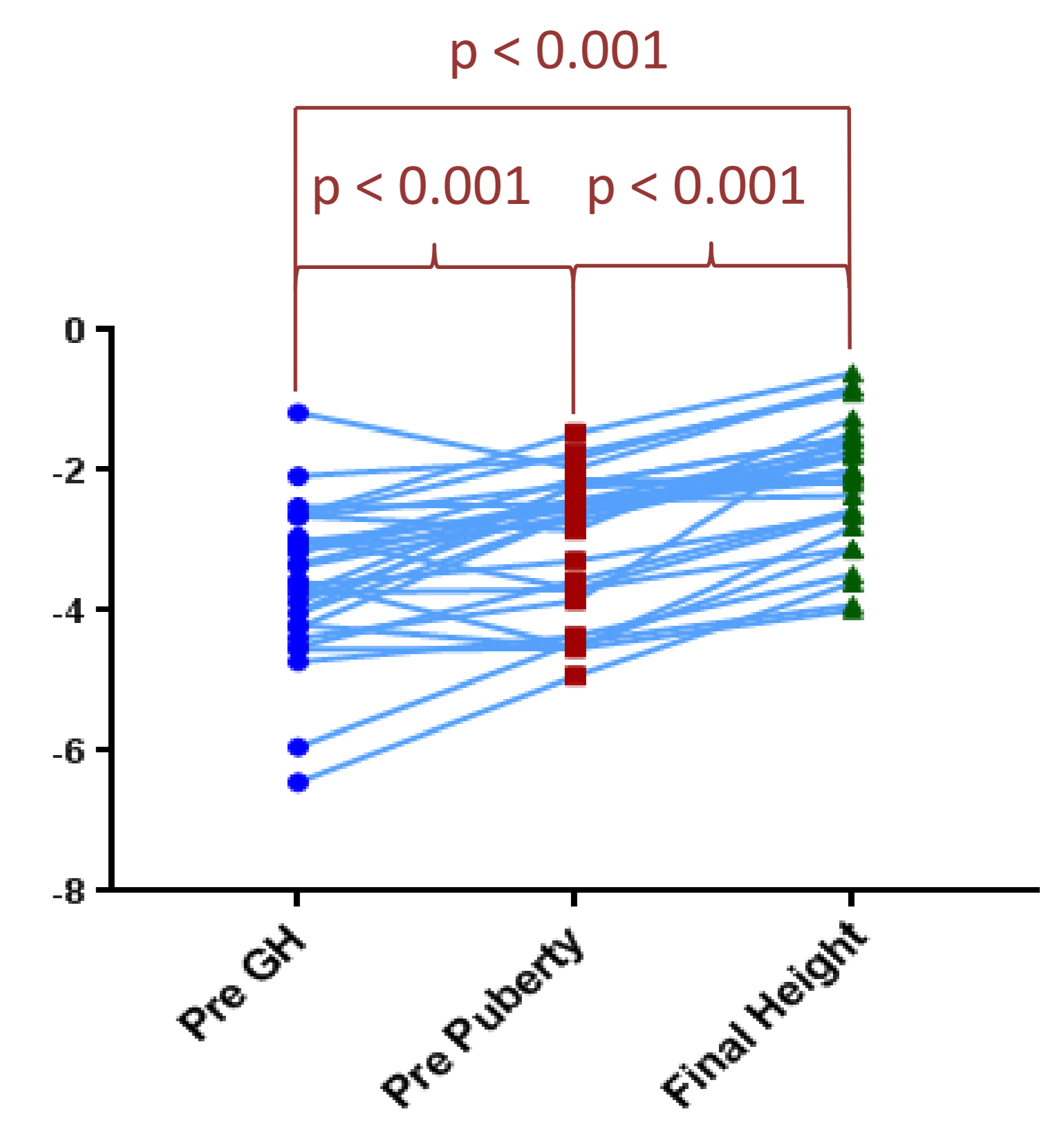
Pre Pubertal: age = 12.6 years (10.1 to 15.6)

Final height: age = 17.9 years (15.6 to 20.5)

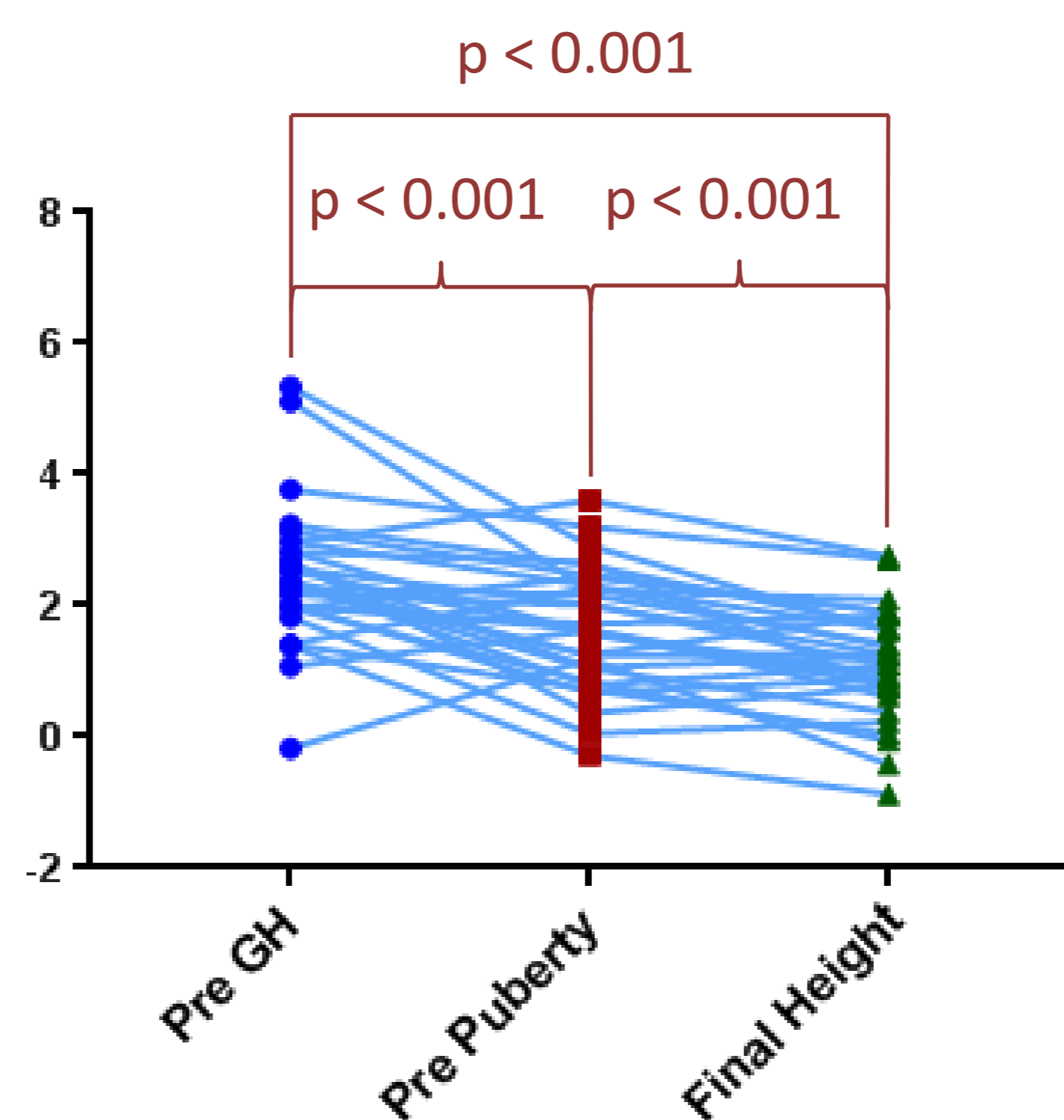
Sitting Height SDS



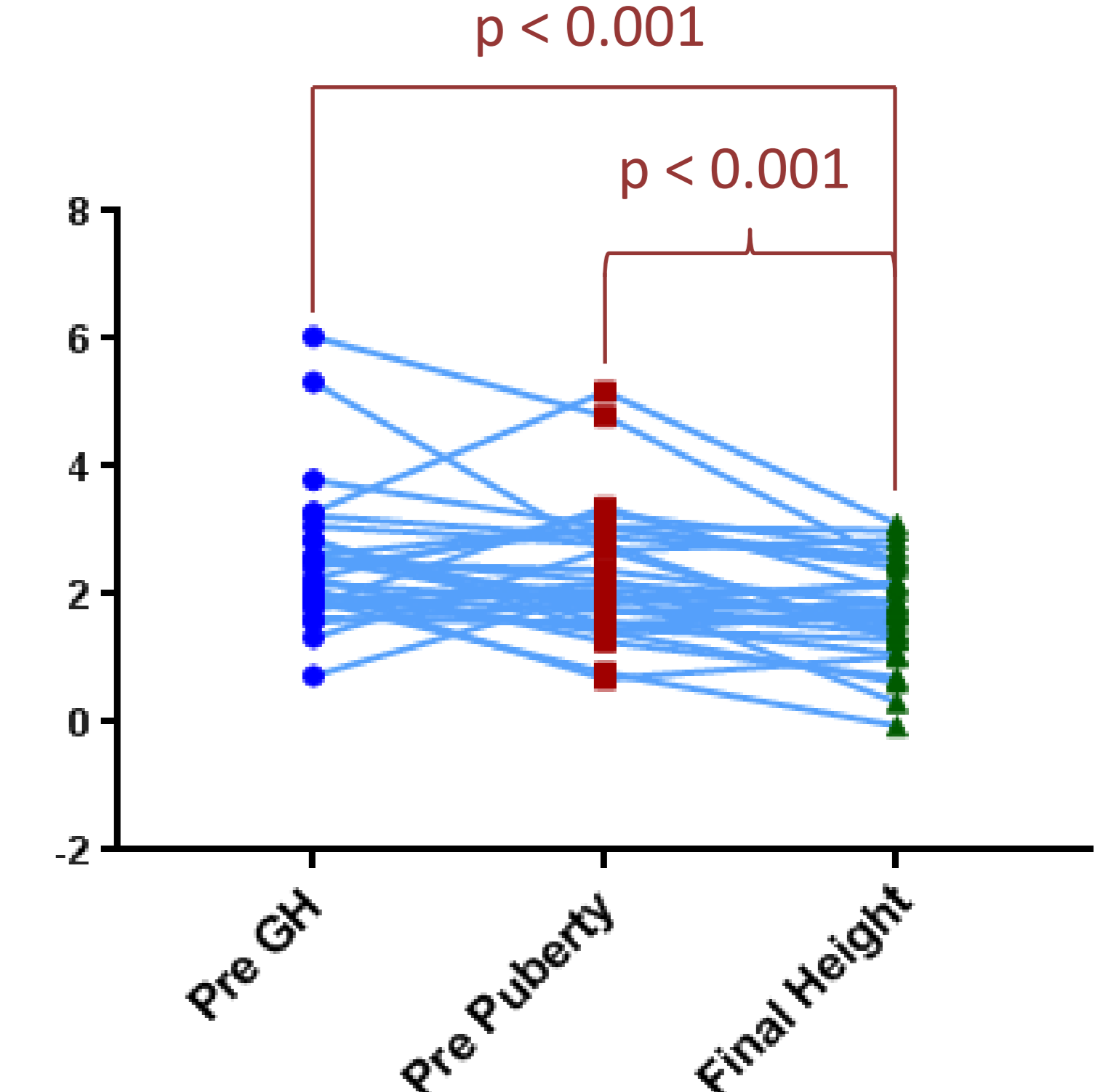
Leg Length SDS



StHt SDS – LL SDS



StHt/Ht SDS



Conclusions

- 1) Pre pubertal girls with TS have disproportionately shorter legs compared to their spine.
- 2) Girls with TS are disproportionate regardless of karyotype.
- 3) At adult height, skeletal disproportion is less pronounced.

