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| Medical treatment - Tables by Outcome | November 2024 |

# Summary of anthropometry outcomes

| **No** | **Study** | **Analysis** | **Baseline**  | **12 months** | **24 months** | **At GAHT** | **Comment** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | (Boogers. et al., 2022)N’lands | Bone age – Chronological age (BA-CA), Mean ± SD Growth velocity (GV cm per year), mean (95% CI) Height SDS, mean (95% CI)  | AMAB onlyBA – CA = -0.2 ± 0.9 years |    GV = 5.3 ± 2.2 cm/year |    GV = 3.5 ± 1.3 cm/year | BA – CA = 1.6 ± 0.8 BA – CA = mean -0.5 years/year of PS 95% CI ± -0.8 to -0.2)   Height SDS = -0.37/year, 95%CI -0.47 to -0.27 | Significant decrease in Bone age vs Chronological age. |
| 2 | (Boogers et al., 2023)N’lands | Height SDS, mean ± SD BMI SDS, median (IQR)  | AMAB onlyHeight SDS = 0.04 ± 1.00 BMI SDS = 0.63 ± -0.41 to 1.39  |   |   | Height SDS = -0.42 ± 1.1 BMI-SDS = 0.43 (-0.41 to 1.51) | No sig change in BMI in AMAB adolescents.Decrease in Height SDS. Significance not analysed.  |
| 3 | (Carmichael et al., 2021)UK | Height Z-score, Mean (95%CI)Weight Z-score, Mean (95%CI)BMI Z-score, Mean (95%CI) BMD Z-score, Mean (95%CI)  | AMAB & AFAB combinedHeight z-score 0.4 (0.1 0.7Weight z-score 0.8 (0.4, 1.3)BMI z-score 0.7 (0.2 1.1) BMD z-score -0.5 (-0.8, -0.1) All n=44BMD z-score -0.4 (-0.8, -0.1) Baseline n = 43BMD z-score -0.7 (-1.2, -0.1)Baseline n=24BMD z-score -0.2 (-1.0, 0.6)Baseline n=12 |  Height z-score 0.2 (-0.1, 0.4)Weight z score 0.8 (0.3, 1.3)BMI z-score 0.7 (0.2, 1.2)  BMD z-score -1.0 (-1.3. -0.6)FU 12 months n = 43  |  Height z-score 0.0 (-0.4, 0.4)Weight z-score 0.6 (-0.1, 1.3)BMI z-score 0.6 (-0.1, 1.3)     BMD z-score -1.3 (-1.9, -0.7)FU 24 months, n = 24 |  Height z-score 0.0 (-0.5, 0.5)Weight z-score 1.0 (0.1, 1.9)BMI z-score 1.1 (0.3, 1.9)Follow up at 36 months      BMD z-score -1.5 (-2.2, -0.8)FU 36 months, n = 12 | Significant decrease in Height Z-scoreIncrease in BMI Z-score at 36 monthsSignificant decrease of BMD-z-scores at 12 and 24 months. No further change at 36 months |
| 4 | (Ciancia et al., 2022)Belgium |  Height Z-score Mean ± SD  | AMABHeight Z-score = -0.46 ± 1.11  AFABHeight Z-score = -0.32 ± 0.34   |   |   | AMABHeight gain = 12.67 cm ± 5.73Height Z score = -0.90 ± 1.02, p < 0.001) AFABHeight gain = 10.17 cm ± 2.96Height Z-score = -0.43 ± 0.56  | AMAB: Good correlation between duration of treatment and height gainAFAB: Weak correlation between duration of PS and height gain For AMAB & AFAB Total height based on gender assigned at birth is the best predictor for final height |
| 5 | (Ghelani et al., 2020)UK | Height SDS, change SDS score from referenceWeight SDS, mean ± SDSBMI SDSs, mean ± SDSLean Mass ± SDSResults expressed as change in SDS scores from reference population at baseline and 12 months.   | AMAB, (change in SDS score)Δ Height SDS = -0.88Δ Weight SDS = -0.05Δ BMI SDS = 0.63Δ Lean Mass SDS = -0.68AFABΔ Height SDS = -0.09Δ Weight SDS = 0.88Δ BMI SDS = 1.04Δ Lean Mass SDS = 0.15 | AMABΔ Height = -1.05, p<0.05Δ Weight = -0.303, p=nsΔ BMI = 0.56, p=ns Δ Lean Mass= -1.11, p=0.002 AFABΔ Height = -0.05, p=ns, Δ Weight = -0.14, p=nsΔ BMI = 1.14, p= nsΔ Lean Mass = -0.08, p=ns |   |   | AMAB: a significant decrease inheight and lean mass SDSs over 12-months GnRHa treatment periodAFAB: no apparent effecton body composition from the parameters measured for transboys. |
| 6 |  (Joseph et al., 2019) UK | Height, mean (SD)Weight, mean (SD)BMI, mean (SD)  | AMAB, n = 10Height = 160.3 (5.4)Weight = 66.4 (14.6)BMI = 25.8 (5.3) AFAB, n = 21Height = 159.0 (35.8)Weight = 49.8 (17.1)BMI = 19.4 (5.3) | AMAB, n= 10Height = 163.4 (5.7)Weight = 76.1 (19.4)BMI = 28.2 (7.1) AFAB, n = 21Height = 160.3 (36.7)Weight = 66.4 (14.6)BMI = 20.7 (7.9) | AMAB, n=10Height = 165.1 (5.7)Weight = 82.9 (30.5)BMI = 30.5 (8.6) AFAB, n = 21Height = 160.3 (37.5)Weight = 66.4 (14.6)BMI = 20.9 (6.6) | - | An increase in height and weight with transgirls (AMAB) having a larger increase in BMI, and transboys (AFAB) a greater increase in height.  |
| 8 |  (Klink. et al., 2015)N’Lands | Height, mean ± SDSBMI, mean ± SDS | AMAB, n=15Height SDS = 0.14 ± 1.3BMI SDS = 0.17 ± 0.90 AFAB, n = 19Height SDS = -0.06 BMI SDS = 0.3 ± 1.0  |   |   | AMABHeight SDS = -0.97 ± 1.3, p<0.001BMI SDS =0.07 ± 1.11, p = ns  AFAB Height SDS = -0.1 ± 1.3, p = nsBMI SDS = 0.5 ± 1.2, p = ns  | No significant change in BMI in either AMAB or AFAB during GnRHa treatment. A significant decrease in height SDS in AMAB compared to cisgender reference group |
| 9 | (Navabi et al., 2021)Canada  | BMI z-score (mean (SD)Lean body mass (LBM) z-scoreTotal Body Fat, (TBF) z-score % z-scores calculated from sex assigned at birth | AMAB n = 51BMI z-score = 0.62 (1.67)LBM z-score = -1.19 (1.45)TBF z-score = 1.42 (1.02) AFAB n = 119BMI z-score = 0.89 (1.25)LBM z-score = -1.03 (1.22)TBF z-score =1.68 (0.96) |   |   | AMAB n = 36BMI z-score = 0.45 (1.69), p=0.475LBM z-score = -1.99 (1.58), p<0.001TBF z-score = 2.46 (0.51), p<0.001 AFAB n = 80BMI z-score = 0.99 (1.30), p = 0.083 LBM z-score = -1.01 (1.28), p< 0.89TBF z-score = 1.78 (0.90), p=0.053 | No evidence of change in BMI z-score for AMAB or AFAB during GnRHa treatment. Significant decrease in LBM and increase in TBF for AMAB. Non-significant trend for increase in TBF for AFAB. |
| 10 | (Nokoff et al., 2021a)USA  | BMI percentileGD compared to cis-gender controls |   |   |   | AMAB GD (n=8) vs Cisgender (n=17)BMI percentile44 ± 39 vs 45 ± 38, p=ns AFABGD (n=9) vs cisgender (n=14)BMI percentile62 ± 32 vs 67 ± 29, p = ns | No significant difference in BMI between AMAB or AFAB GD adolescents compared to cisgender controls |
| 11 | (Perl et al., 2021)Israel  | BMI-SDS  | AFAB (n=15)BMI SDS = 0.2 ± 0.9 |   |   | AFAB (n = 15)BMI SDS = 0.4± 0.9, p=0.198  | No significant change in BMI after GnRHa treatment in AFAB adolescents. |
| 12 | (Schagen et al., 2016) | Height (Ht) SDS, (mean (SD)) BMI SDSTotal body fat percent (Fat%)Lean body mass percent (LBM%)  | AMABHt SD S =0.20 (1.0), n=36BMI SDS = 0.82 (1.1), n=36Fat % = 22.4 (6.9), n=26LBM% = 74.6 (6.4), n=26 AFABHt SD S = -0.10 (1.1), n41BMI SDS = 0.68 (1.2), n=41Fat % = 25.0 (6.9), n=26LBM% = 71.5 (6.7)  | AMABHt SDS, -0.04 (1.0), p<0.001BMI SDS 0.89 (1.2), p=nsFat% = 26.8 (6.6), p<0.001LBM% = 70.9 (7.3), p=0.001 AFABHt SDS, -0.25 (1.1), p<0.001BMI SDS 0.84 (1.2), p=0.01Fat% = 29.5 (7.3), p<0.001LBM% = 67.7 (6.7), p<0.001 |   |   | In AMAB adolescents, significant decrease in height SDS and Fat% and significant decrease in LBM%. No significant change in BMI SDS.  In AFAB significant decrease in height SDS and LBM% and sign increase in BMI SDS and Fat%.    |
| 13 | (Schagen et al., 2020)N’lands | HeightWeightBMI |   |   |   |   | Descriptive data provided but no comparisons of centiles before and after GnRHa provided  |
| 14 | (Schulmeister et al., 2022)USA | BMI z scoreHeight velocity (HV) centimetres per year (cm/yr) median (IQR)Tanner stage 2,3,4 (T2, T3,T4) | AMAB, n = 26BMI z score =0.46 (0.89) AFAB, n = 29BMI z-score = 0.38 (0.94) | AMAB BMI Z score = 0.66 (0.97)HV T2 = 5.6 (4.7 – 5.7), n = 21HV T3 = 4.2 (2.3 – 6.4), n = 3HV T4 = 1.6 (1.5 – 2.9), n= 2 AFABBMI-z-score = 0.63 (0.95)HV T2 = 5.0 (4.2 – 5.4), n = 13HV T3 = 4.4 (4.0 – 5.5), n = 13HV T4 = 2.9 (1.5 – 3.5), n = 3  |   |   | Tanner stage had a significant impact on HV. HV was also negatively associated with age at GnRHa starteven when Tanner stage at start was included as a covariate,demonstrating that some but not all of the effect of age wasmediated by Tanner stage (R2 = 0.3, p = 0.02). |
| 16 | (Stoffers et al., 2019)N’lands | Height (Ht) SDS BMI SDS Using both male (transgender) and female (sex assigned at birth) reference range | AFAB n = 62Ht SDS male = -1.3 ± 1.2Ht SDS female = -0.1 ± 1.0BMI SDS male = 0.68 ± 1.0BMI SDS female = 0.47 ± 1.0 |   |   | AFAB n = 62Ht SDS male = -1.7 ± 09Ht SDS female = -0.2 ± 1.0BMI SDS male = 0.58 ± 1.1BMI SDS female = 0.40 ± 1.0 | No significant change in height SDS or BMI SDS using reference ranges for either identified gender or sex assigned at birth. |
| 19 |  (Vlot et al., 2017)N’Lands | HeightWeight |   |   |   |   | Descriptive data provided but no comparisons of centiles before and after GnRHa provided |
| 20 |  (Willemsen et al., 2023)N’lands | Height (Ht) SDSPubertal (P) and post-pubertal (PP) comparison of growth using female reference range | AFAB n = 61P-Ht SDS = 0.1 ± 1.5PP -Ht SDS -0.1 ± 1.0 |   |   | AFAB n = 61P-Ht SDS = -0.2 ± 1.0PP -Ht SDS -0.2 ± 1.1 | Transgender boys with BA >12 years at start PS declined more in height SDS during PS compared with transgender boys with BA ≤12 years (difference between groups −0.6; 95% CI, −0.7 to −0.4). |

AFAB = Assigned female at birth, AMAB = Assigned male at birth, BMI = Body mass index, BA = bone age, CA = chronological age, GD = Gender dysphoria, GV = growth velocity, Ht = height, IQR = interquartile range, LBM = lean body mass, N’lands = Netherlands, SDS = standard deviation, TBF = Total body fat, UK = United Kingdom, USA = United States of America, Wt = weight

# Appendix 5 Summary of lumbar spine bone mineralisation outcomes

| **No** | **Study** | **Analysis** | **BMD Z-scores Lumbar Spine** |
| --- | --- | --- | --- |
|  |  |  | **Baseline** | **12 months** | **24 months** | **At GAHT** |
| **2** | **(Boogers et al., 2023)****N ’lands** | **BMD-HAZ-scores****Regular dose oestradiol (2 mg)****High dose oestradiol (6 mg)****Ethinyl oestradiol**  |  |  |  | **Data not provided for changes in BMD during PS alone. However, BMD HAZ-score decreased for all three groups.** |
| 3 |  (Carmichael et al., 2021)UK | AMAB and AFAB combinedBMD Z-score (Mean (95%CI))  |  BMD z-score -0.5 (-0.8, -0.1) All n=44 BMD z-score -0.4 (-0.8, -0.1) Baseline n = 43 BMD z-score -0.7 (-1.2, -0.1)Baseline n=24 BMD z-score -0.2 (-1.0, 0.6)Baseline n=24 |    BMD z-score -1.0 (-1.3. -0.6)FU 12 months n = 43  |        BMD z-score -1.3 (-1.9, -0.7)FU 24 months, n = 24 |           BMD z-score -1.5 (-2.2, -0.8)FU 36 months, n = 12 |
| **6** |  **(Joseph et al., 2019)** **UK** | **BMAD Z-scores**Mean (SD)P1 baseline to 12 monthsP2 baseline to 24 monthsP3 12 to 24 months | AMAB 3 scans, n=10, 0.13 (0.972) AMAB 2 scans, n=31: 0.859 (0.154)   AFAB 3 scans, n=21: -0.715 (1.406) AFAB 2 scans, n=39: -0.186 (1.230) | AMAB 3 scans, n=10: -6.50 (1.182) p1 < 0.001AMAB 2 scans, n=31: -0.228 (1.027)P1 <0.000 AFAB 3 scans, n=21: -1.610 (1.462), p1<0.000AMAB 2 scans, n=39; -0.541 (1.396P1 < 0.006 | AMAB 3 scans, n=10 -0.890 (1.075), p2 < 0.000. p3 = 0.203  AFAB 3 scans, n=21: -2.000 (1.384), p2 <0.000. P3 = 0.035 | - |
| **8** |  **(Klink. et al., 2015)****N’Lands** | **BMAD z-scores****Mean (SD)****P1 baseline to start of GAHT** | AMAB, n=11, -0.44 (1.10) AFAB, n=18, 0.28 (0,90) | - | - | AMAB, n=11, -0.90 (0.80) p1 = NS AFAB, n=18, -0.50 (0.81) p1 = 0.004 |
| **9** |  **(Navabi et al., 2021)****Canada**  | **BMAD Z-scores****Baseline; mean (SD)****Prior to GAHT, mean (95% CI)****p1 AMAB to AFAB****p2 Baseline to GAHT** | AMAB, n = 51: -0.22 (1.41)  AFAB, n=119: -0.10 (1.00)P1 < 0.001 | - | - | AMAB: n = 36, BMAD Z-score -0.76 (1.48) change -0.37 (-0.61 to -0.14) p2= NS AFAB: n = 80, BMD Z-score -0.76 (0.93) change -0.59, P2 <0.001 |
| **13** | **(Schagen et al., 2020)****N’lands** | **BMAD Z scores mean (SD)****p1 baseline to 24 months early puberty****p2 baseline to 24 months late puberty** | AMAB early puberty, -0.33 (0.33) AMAB late puberty, -0.65 (0.20) AFAB early puberty, -0.15 (0.29) AFAB late puberty, 0.33 (0.14) | - | AMAB Early puberty, -1.10 (0.34) p1 <0.05AMAB late puberty, -0.15 (0.29) p2 <0.05AFAB early puberty, -0.86 (0.30)p1 <0.05AFAB late puberty, -0.56 (0.17)p2 <0.05 | - |
| **16** | **(Stoffers et al., 2019)****N’lands** | **BMD Z-score****Mean (SD)** | AFAB: n = 62, 0.02 (1.00) |   |   | AFAB, -0.81 (1.02), P <0.001 |
| **19** |  **(Vlot et al., 2017)****N’Lands** | **BMAD Z-score****Mean (range)****p1 comparison baseline young AMAB & AFAB** **p2 comparison baseline old AMAB & AFAB****p3 comparison young AMAB baseline to GAHT****p4 comparison old AMAB baseline to GAHT****p5 comparison young AFAB baseline to GAHT****p6 comparison old AFAB baseline to GAHT** | AMAB young n = 15, -0.2 (-1.82 to 1.18)AMAB old, n= 5, -1.18 (-1.78 to 1.09)p1 = 0.003p2 = NSAFAB young n= 11, -0.05 (-0.78 to 2.94)AFAB old n=23, 0.27 (-1.6 to 1.8)  |   |   | AMAB young, -1.52 (-2.36 to 0.42)AMAB old, -1.15 (-2.21 to 0.08)p3 = NSp4 NSAFAB young, -0.84 (-2.2 to 0.87)AFAB old, 0.29 (-2.28 to 0.90)p5 < 0.01p6 <0.01 |

AMAB = assigned male at birth (transgirls), AFAB = assigned female at birth (transboys), At GAHT = at the commencement of gender affirming hormone treatment. Baseline = prior to initiation of GAHT, BMAD z-score = Bone Mineral Apparent Density z-score. CI = confidence intervals. N’lands = Netherlands, NS = not significant, UK = United Kingdom

2. Insufficient data provided to assess BMD-z-scores

3. AMAB and AFAB analysed as a single group. Height adjusted BMD z scores. Statistical analyses not performed for Z-scores. 44 cases assessed at baseline, 43 assessed at 12 months, 24 assessed at 24 months and n=12 assessed at 36 months (data not shown. BMD z-score data at 36 months (n= 12) (-1.5 (-2.2 to -0.8); baseline -0.2 (-1.0 to 0.6) 36 months. A decrease in HA BMD-Z score was identified from baseline to 12 months 24 months but no further decrease from 24 to 36 months.

6. Mean BMD Z-scores decreased from baseline to 12 months for AMAB and AFAB adolescents. In the subgroup with a DEXA scan at 24 months there was a significant decrease in BMAD z-scores in AFAD from 12 to 24 months, but not AMAD adolescents.

8. Mean BMAD z-scores did not significantly decrease for AMAB adolescents from commencement of GnRHa therapy to commencement of GAHT, but significant decrease for AFAB adolescents.

9. Mean BMAD z-score significantly less in AMAB adolescents than AFAB but did not significantly change in AMAB but did significantly change in AFAB.

13. Early puberty defined as Tanner 2/3, late puberty defined as Tanner 4/5. At baseline, mean BMD z-score higher in AFAB than AMAB adolescents. The BMAD z-score of all groups significantly decreased by 24 months of treatment with GnRHa

16. Mean BMD z-scores decreased from baseline to treatment with GAHT in transboys (AFAB adolescents)

19. Young and old based on bone age. Young AFAB bone age < 14 years, young AMAB <15 years. At baseline, the young transgirls (AMAB) had a lower mean BMAD Z-score than the young transmen (p=0.003). There was no difference at baseline between young and old transmen, young and old transwomen, or between old transmen and old transwomen. Suppression of puberty resulted in a decrease of BMAD of the old transmen.

#  Appendix 6 Summary of cardiometabolic outcomes

| **No** | **Study** | **Analysis** | **Baseline** | **12 months** | **24 months** | **At GAHT** | **Comment** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 2 | (Boogers et al., 2023)N’lands | Height SDSMean ± SD BMI SDS, median (IQR)  | AMAB onlyHeight SDS = 0.04 ± 1.00 BMI SDS = 0.63 ± -0.41 to 1.39  |   |   | Height SDS = -0.42 ± 1.1 BMISDS = 0.43 (-0.41 to 1.51) | No sig change in BMI in AMAB adolescents.Decrease in Height SDS. Significance not analysed.  |
| 3 |  (Carmichael et al., 2021)UK |  Height Z-score (Mean (95%CI))Weight Z-score (Mean (95%CI))BMI Z-score (Mean (95%CI)) BMD Z-score (Mean (95%CI))  | AMAB & AFAB combinedHeight z-score 0.4 (0.1 0.7Weight z-score 0.8 (0.4, 1.3)BMI z-score 0.7 (0.2 1.1) BMD z-score -0.5 (-0.8, -0.1) All n=44BMD z-score -0.4 (-0.8, -0.1) Baseline n = 43BMD z-score -0.7 (-1.2, -0.1)Baseline n=24BMD z-score -0.2 (-1.0, 0.6)Baseline n=24 |  Height z-score 0.2 (-0.1, 0.4)Weight z score 0.8 (0.3, 1.3)BMI z-score 0.7 (0.2, 1.2)   BMD z-score -1.0 (-1.3. -0.6)FU 12 months n = 43  |  Height z-score 0.0 (-0.4, 0.4)Weight z-score 0.6 (-0.1, 1.3)BMI z-score 0.6 (-0.1, 1.3)     BMD z-score -1.3 (-1.9, -0.7)FU 24 months, n = 24 |  Height z-score0.0 (-0.5, 0.5)Weight z-score 1.0 (0.1, 1.9)BMI z-score 1.1 (0.3, 1.9)Follow up at 36 months      BMD z-score -1.5 (-2.2, -0.8)FU 36 months, n = 12 | Significant decrease in Height Z-scoreIncrease in BMI Z-score at 36 monthsSignificant decrease of BMD-z-scores at 12 and 24 months. No further change at 36 months |
| 5 | (Ghelani et al., 2020)UK | Height ± SDSWeight ± SDSBMI ± SDSLean Mass ± SDS  | AMAB,Height = -0.88Weight = -0.05BMI = 0.63Lean Mass = -0.68AFABHeight = -0.09Weight = 0.88BMI = 1.04Lean Mass = 0.15 | AMAB Height = -1.05, p<0.05Weight = -0.303, p=nsBMI = 0.56, p=ns Lean Mass = -1.11, p=0.002 AFABHeight = -0.05, p=ns, Weight = -0.14, p=nsBMI = 1.14, p= nsLean Mass = -0.08, p=ns |   |   | AMAB: a significant decrease inheight and lean mass SDSs over 12-months GnRHa treatment periodAFAB: no apparent effecton body composition from the parameters measured fortransboys. |
| 6 |  (Joseph et al., 2019) UK | Height ± SDWeight ± SDBMI ± SD  | AMAB, n = 10Height = 160.3 (5.4)Weight = 66.4 (14.6)BMI = 25.8 (5.3) AFAB, n = 21Height = 159.0 (35.8)Weight = 49.8 (17.1)BMI = 19.4 (5.3) | AMAB, n= 10Height = 163.4 (5.7)Weight = 76.1 (19.4)BMI = 28.2 (7.1) AFAB, n = 21Height = 160.3 (36.7)Weight = 66.4 (14.6)BMI = 20.7 (7.9) | AMAB, n=10Height = 165.1 (5.7)Weight = 82.9 (30.5)BMI = 30.5 (8.6) AFAB, n = 21Height = 160.3 (37.5)Weight = 66.4 (14.6)BMI = 20.9 (6.6) | - | An increase in height and weight with transgirls (AMAB) having a larger increase in BMI, and transboys (AFAB) a greater increase in height.  |
| 8 |  (Klink. et al., 2015)N’Lands | Height SDSBMI SDS Height velocity | AMAB, n=15Height SDS = 0.14 ± 1.3BMI SDS = 0.17 ± 0.90 AFAB Height SDS = -0.06 HV was also negatively associated with age at GnRHa starteven when Tanner stage at start was included as a covariate,demonstrating that some but not all of the effect of age wasmediated by Tanner stage (R2 ¼ .3, p ¼ .02). 1.2BMI SDS = 0.3 ± 1.0  |   |   | AMABHeight SDS = -0.97 ± 1.3, p<0.001BMI SDS =0.07 ± 1.11, p = ns  AFAB Height SDS = -0.1 ± 1.3, p = nsBMI SDS = 0.5 ± 1.2, p = ns  | No significant change in BMI in either AMAB or AFAB during GnRHa treatment. A significant decrease in height SDS in AMAB compared to cisgender reference group |
| 9 |  (Navabi et al., 2021)Canada  | BMI z-score (mean (SD)Lean body mass(LBM) z-scoreTotal Body Fat,(TBF) z-score % z-scores calculated from sex assigned at birth | AMAB n = 51BMI z-score = 0.62 (1.67)LBM z-score = -1.19 (1.45)TBF z-score = 1.42 (1.02) AFAB n = 119BMI z-score = 0.89 (1.25)LBM z-score = -1.03 (1.22)TBF z-score =1.68 (0.96) |   |   | AMAB n = 36BMI z-score = 0.45 (1.69), p=0.475LBM z-score = -1.99 (1.58), p<0.001TBF z-score = 2.46 (0.51), p<0.001 AFAB n = 80BMI z-score = 0.99 (1.30), p = 0.083 LBM z-score = -1.01 (1.28), p< 0.89TBF z-score = 1.78 (0.90), p=0.053 | No evidence of change in BMI z-score for AMAB or AFAB during GnRHa treatment. Significant decrease in LBM and increase in TBF for AMAB. Non-significant trend for increase in TBF for AFAB. |
| 10 |  (Nokoff et al., 2021a)USA  | BMI percentileGD compared to cis-gender controls |   |   |   | AMAB GD (n=8) vs Cisgender (n=17)BMI percentile44 ± 39 vs 45 ± 38, p=ns AFABGD (n=9) vs cisgender (n=14)BMI percentile62 ± 32 vs 67 ± 29, p = ns | No significant difference in BMI between AMAB or AFAB GD adolescents compared to cisgender controls |
| 11 | (Perl et al., 2021)Israel | BMI SDS  | AFAB (n=15)BMI SDS = 0.2 ± 0.9 |   |   | AFAB (n = 15)BMI SDS = 0.4± 0.9, p=0.198   | No significant change in BMI after GnRHa treatment in AFAB adolescents. |
| 12 | (Schagen et al., 2016)N’lands | Height (Ht) SDS (mean (SD)) BMI SDSFat percent (Fat%)Lean body mass percent (LBM%)  | AMABHt SD S =0.20 (1.0), n=36BMI SDS = 0.82 (1.1), n=36Fat % = 22.4 (6.9), n=26LBM% = 74.6 (6.4), n=26 AFABHt SD S = -0.10 (1.1), n41BMI SDS = 0.68 (1.2), n=41Fat % = 25.0 (6.9), n=26LBM% = 71.5 (6.7)  | AMABHt SDS,-0.04 (1.0) ,p<.001BMI SDS 0.89 (1.2), p=nsFat% = 26.8 (6.6), p<0.001LBM% = 70.9 (7.3), p=0.001 AFABHt SDS,-0.25 (1.1) ,p<.001BMI SDS 0.84 (1.2), p=0.01Fat% = 29.5 (7.3), p<0.001LBM% = 67.7 (6.7), p<0.001 |   |   | In AMAB adolescents, significant decrease in height SDS and Fat% and significant decrease in LBM%. No significant change in BMI SDS.  In AFAB significant decrease in height SDS and LBM% and sign increase in BMI SDS and Fat%.    |
| 13 | (Schagen et al., 2020)N’lands | Height WeightBMI |   |   |   |   | Descriptive data provided but no comparisons of centiles before and after GnRHa provided  |
| 14 | (Schulmeister et al., 2022)USA | BMI z scoreHeight velocity (HV) centimetres per year (cm/yr) median (IQR)Tanner stage 2,3,4 (T2, T3,T4) | AMAB, n = 26BMI z score =0.46 (0.89) AFAB, n = 29BMI z-score = 0.38 (0.94) | AMAB BMI Z score = 0.66 (0.97)HV T2 = 5.6 (4.7 – 5.7), n = 21HV T3 = 4.2 (2.3 – 6.4), n = 3HV T4 = 1.6 (1.5 – 2.9), n= 2 AFABBMI-z-score = 0.63 (0.95)HV T2 = 5.0 (4.2 – 5.4), n = 13HV T3 = 4.4 (4.0 – 5.5), n = 13HV T4 = 2.9 (1.5 – 3.5), n = 3  |   |   | Tanner stage had a significant impact on HV. HV was also negatively associated with age at GnRHa starteven when Tanner stage at start was included as a covariate,demonstrating that some but not all of the effect of age wasmediated by Tanner stage (R2 = 0.3, p = 0.02). |
| 16 | (Stoffers et al., 2019)N’lands | Height (Ht) SDS BMI SDS Using both male (transgender) and female (sex assigned at birth) reference range | AFAB n = 62Ht SDS male = -1.3 ± 1.2Ht SDS female = -0.1 ± 1.0BMI SDS male = 0.68 ± 1.0BMI SDS female = 0.47 ± 1.0 |   |   | AFAB n = 62Ht SDS male = -1.7 ± 09Ht SDS female = -0.2 ± 1.0BMI SDS male = 0.58 ± 1.1BMI SDS female = 0.40 ± 1.0 | No significant change in height SDS or BMI SDS using reference ranges for either identified gender or sex assigned at birth. |
| 19 |  (Vlot et al., 2017)N’Lands | HeightWeight |   |   |   |   | Descriptive data provided but no comparisons of centiles before and after GnRHa provided |

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