INCLUSIVE YOUTH FOOTBALL

Acronym: IN YOUTH FOOTBALL

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TOPICS

1. ASSESSMENT OF BIOLOGICAL MATURATION

2. KHAMIS-ROCHE EQUATION

3. EXPLANATION EXCEL SHEET

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1. Assessment of biological maturation

- To measure the biological maturation, we proposed the **Khamis-Roche equation**.

REFERENCE:

Khamis, H. J., & Roche, A. F. (1994). Predicting adult stature without using skeletal age: The Khamis-Roche method. Pediatrics, 94, 504–507 (erratum in Pediatrics, 95, 457 [1995] for the corrected version of the tables)

- The protocol has been utilized by **several academies within the Premier League**.

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Khamis-Roche equation*

Predicts adult stature from:

- Age
- Height
- Weight
- Mid parental height

→ Collecting these variables

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IN YOUTH FOOTBALL — 101183703

ERASMUS-SPORT-2024

Anthropometric data collection

Players name:

Country:

Assessor initials:

Assessment date (day/month/year):

Birthday (day/month/year):

Height assessment 1 (cm):

Height assessment 2 (cm):

Example: 178,1 cm

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IMPORTANT INFORMATIONS FOR DATA COLLECTION

- Ensure that players do not wear personal items, such as bracelets, rings, or watches.
- Conduct the assessment of height and weight while the players are in minimal clothing.
- When measuring height, align the Frankfort plane, which involves positioning the tragion and orbital anthropometric points properly. Refer to the figure below for guidance.

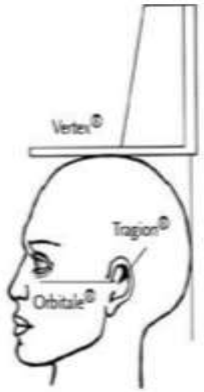

Figure 1. Alignment of Frankfort plan.

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2. Khamis-Roche equation

- **Predicts adult height** from age, height, weight, mid parent height (adjusted for overestimation)**

PREDICT ADULT HEIGHT = **Intercept** + (**β_1** x height) + (**β_2** x weight) + (**β_3** x mid-parent height)

- The **bold terms** in the equation represents **sex** and **age specific coefficients**.
- We are already familiar with these terms, so we just need to introduce **height**, **weight**, and **mid-parent height**.

Epstein, L. H., Valoski, A. M., Kalarchian, M. A., & McCurley, J. (1995). Do children lose and maintain weight easier than adults: a comparison of child and parent weight changes from six months to ten years. Obesity Research, 3(5), 411–417.

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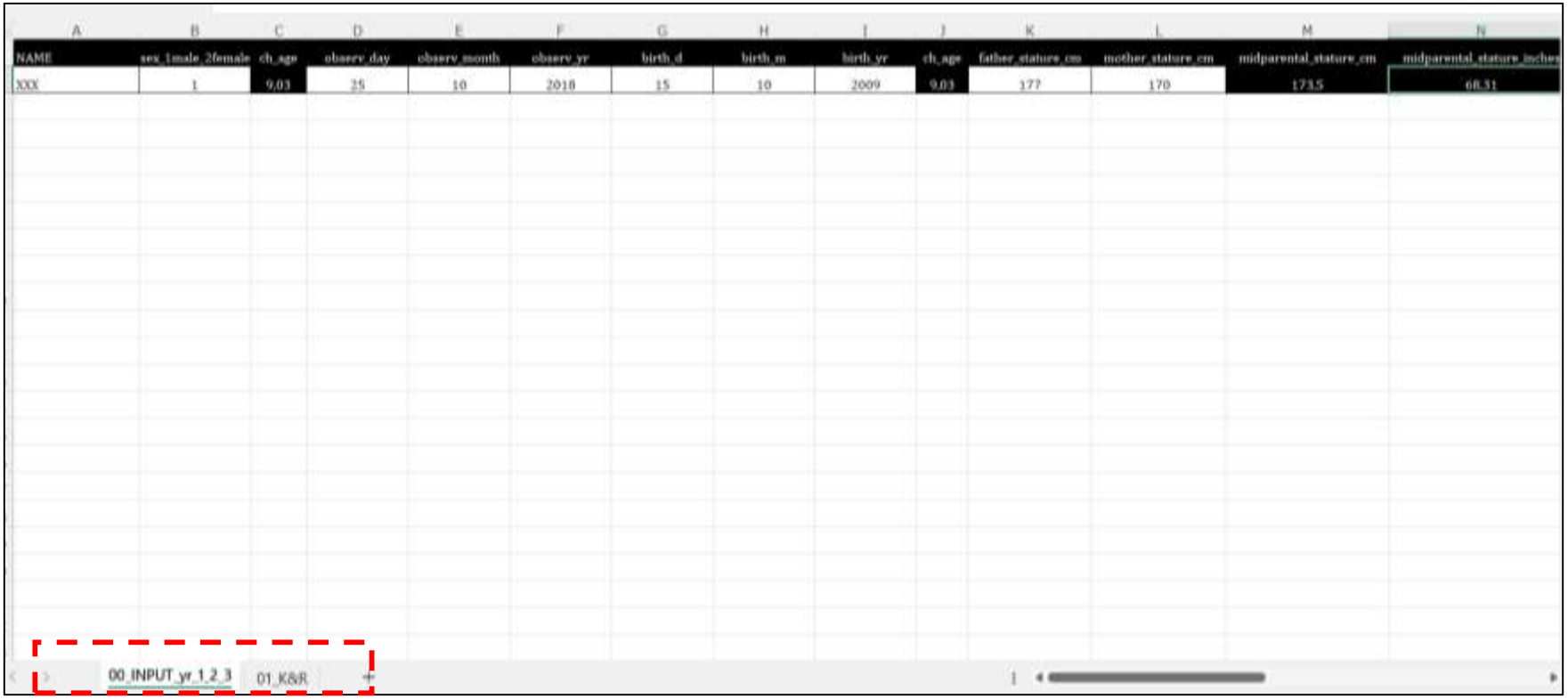
3. Excel sheet



NAME	sex_1male_2female	ch_age	observ_day	observ_month	observ_yr	birth_d	birth_m	birth_yr	ch_age	father_stature_cm	mother_stature_cm	midparental_stature_cm	midparental_stature_inches
XXX	1	9,03	25	10	2018	15	10	2009	9,03	177	170	173,5	68,31

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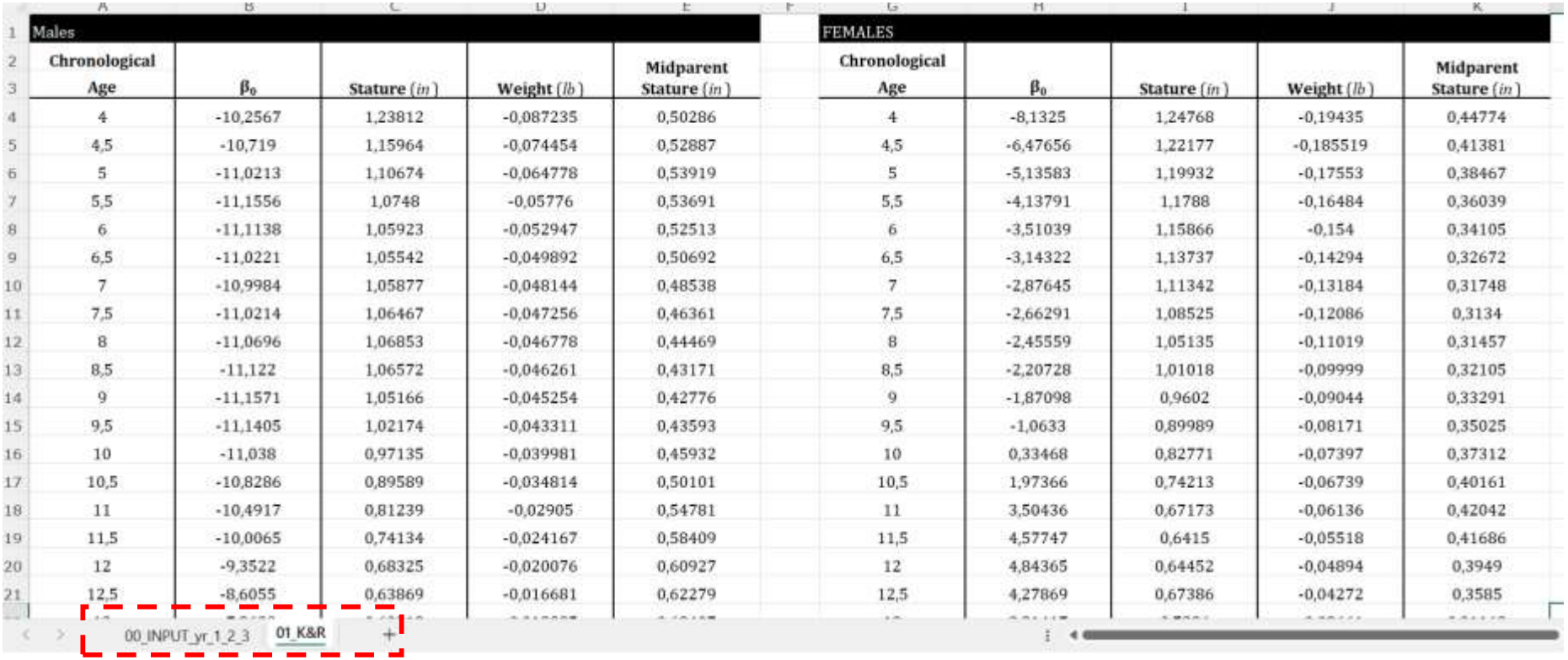
3. Excel sheet



Males					FEMALES				
Chronological Age	β_0	Stature (in)	Weight (lb)	Midparent Stature (in)	Chronological Age	β_0	Stature (in)	Weight (lb)	Midparent Stature (in)
4	-10,2567	1,23812	-0,087235	0,50286	4	-8,1325	1,24768	-0,19435	0,44774
4,5	-10,719	1,15964	-0,074454	0,52887	4,5	-6,47656	1,22177	-0,185519	0,41381
5	-11,0213	1,10674	-0,064778	0,53919	5	-5,13583	1,19932	-0,17553	0,38467
5,5	-11,1556	1,0748	-0,05776	0,53691	5,5	-4,13791	1,1788	-0,16484	0,36039
6	-11,1138	1,05923	-0,052947	0,52513	6	-3,51039	1,15866	-0,154	0,34105
6,5	-11,0221	1,05542	-0,049892	0,50692	6,5	-3,14322	1,13737	-0,14294	0,32672
7	-10,9984	1,05877	-0,048144	0,48538	7	-2,87645	1,11342	-0,13184	0,31748
7,5	-11,0214	1,06467	-0,047256	0,46361	7,5	-2,66291	1,08525	-0,12086	0,3134
8	-11,0696	1,06853	-0,046778	0,44469	8	-2,45559	1,05135	-0,11019	0,31457
8,5	-11,122	1,06572	-0,046261	0,43171	8,5	-2,20728	1,01018	-0,09999	0,32105
9	-11,1571	1,05166	-0,045254	0,42776	9	-1,87098	0,9602	-0,09044	0,33291
9,5	-11,1405	1,02174	-0,043311	0,43593	9,5	-1,0633	0,89989	-0,08171	0,35025
10	-11,038	0,97135	-0,039981	0,45932	10	0,33468	0,82771	-0,07397	0,37312
10,5	-10,8286	0,89589	-0,034814	0,50101	10,5	1,97366	0,74213	-0,06739	0,40161
11	-10,4917	0,81239	-0,02905	0,54781	11	3,50436	0,67173	-0,06136	0,42042
11,5	-10,0065	0,74134	-0,024167	0,58409	11,5	4,57747	0,6415	-0,05518	0,41686
12	-9,3522	0,68325	-0,020076	0,60927	12	4,84365	0,64452	-0,04894	0,3949
12,5	-8,6055	0,63869	-0,016681	0,62279	12,5	4,27869	0,67386	-0,04272	0,3585

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VIDEO EXAMPLE

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CONCLUSION

ORGANIZE THE PLAYERS INTO THREE BANDS:

- 80 to 85% of adult height
- 85 to 90% of adult height
- 90 to 95% of adult height

THANK YOU FOR YOUR ATTENTION

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