



TYGERBERG HOSPITAL AND METRO EAST  
MATERNITY SERVICE

Department of Obstetrics and Gynaecology



## Protocol for management of an SGA fetus with normal UAD at TBH and District/Regional Hospitals

\*SGA: small for gestational age; UAD: umbilical artery doppler

Clinical problem: SF growth <10<sup>th</sup> centile (with previously normal growth) and/or plateau of growth and/or growth crossing centiles in otherwise uncomplicated pregnancy

If clinical suspicion of SGA at community clinic (MOU/BANC+): refer to closest ultrasound service/district/regional hospital doctor's clinic

### A. Verify SGA diagnosis and appropriate protocol application

- Verify correct dating (correlate with history, first scan)
- Perform growth scan including liquor volume [deepest vertical pool (DVP)] and UAD
- Plot ultrasound biometry, estimated fetal weight and UAD on graphs for correct gestation
- **If the ultrasound findings are in keeping with a definition of SGA (current EFW < P10 OR HC/AC\* >2 standard deviations (P>97.5); OR AC < P5 if head measurements difficult for the correct gestation), further management must remain at the district/regional hospital and this protocol applies**
- Biometry and weight reference ranges: recommended table and graphs attached

\*HC/AC ratio is increased with asymmetrical growth, which is the more concerning form of SGA

### B. Protocol Exclusions

- If **not** SGA on ultrasound as defined above, this protocol does not apply, and the patient can be referred back to her clinic. An UAD between P75 and P95 needs to be repeated 2 weeks later.
- If UAD > 95<sup>th</sup> centile, this protocol does NOT apply. Kindly follow the protocol for abnormal UAD (regardless of growth centile).

### C. Advice and Ongoing surveillance

- Advise on cessation of smoking, alcohol, etc.
- Rule out pre-eclampsia (PE) at least every two weeks
- Once viable, instruct mother on daily kick count chart

- SGA pregnancies are at risk of term (rarely preterm) intra-uterine fetal demise (IUFD), fetal distress in labour and pre-eclampsia
- These risks are not contra-indications to vaginal delivery, but requires continuous CTG monitoring throughout labour

### Management

- **SGA < 28 weeks:** Repeat growth scan + UAD at 27-28 weeks (unless done in last 3 weeks)
- **SGA ≥ 28 weeks:**
  - **Repeat UAD and vitals every two weeks [TBH-patients at Fetal Evaluation clinic (FEC)] and manage accordingly if it becomes abnormal**
  - **If EFW < P3 at 28-34 wks** and UAD remains normal AND no PE:
    - Repeat growth scan locally at **34 weeks (if at least two weeks from previous EFW)**, incl. EFW, DVP (Plot Size and UAD on graphs for correct gestation) **continue with visits as below:**

#### Assessment at/after 34 weeks: management at district/regional hospitals

- No PE AND adequate growth trend AND normal liquor AND reactive CTG (at 34, 35 and 36 weeks) – aim to deliver at 36<sup>0</sup>-36<sup>6</sup> weeks
- No PE but clearly slowing growth trend OR reduced liquor (DVP < 2cm) BUT CTG reactive – repeat CTG at 35 weeks – aim to deliver no later than 36<sup>0</sup> weeks
- No PE but CTG non-reactive twice on same day (long strip at least 40-50 minutes) – admit and consider delivery unless the CTG becomes reactive. **Make sure patient is at the correct level of care for the anticipated GA at delivery and anticipated birthweight.**

#### Assessment at/after 34 weeks: management at TBH

- Follow up weekly at HRC to exclude PE and for CTG at FEC
- If weekly CTG reactive AND no other indication for delivery: Phone 5572 at the ~34 week visit to arrange a formal fetal medicine reassessment **on a Thursday closest to 36 weeks** – management will be planned according to Gratacós criteria.

○ **If EFW P3-10 at 28-36wks and UAD remains normal AND no PE**

- Repeat growth scan and CTG at **36 weeks**, incl. EFW, DVP

Management at district/regional hospitals

- If EFW at 36 weeks remains > P3 AND adequate growth trend AND normal liquor AND reactive CTG AND no PE – aim to deliver at 39<sup>0</sup>-39<sup>6</sup> weeks (the diagnosis is SGA and not fetal growth restriction (FGR)).
- If no PE but EFW at 36 weeks is clearly showing slowing growth trend (but still above P3) OR reduced liquor (DVP < 2cm):
  - CTG reactive – repeat CTG at 37 weeks – aim to deliver at 38<sup>0</sup> weeks
  - CTG non-reactive twice on same day – admit and consider delivery
- If EFW at 36 weeks is < P3: admit and consider delivery.

Management at TBH

- If no PE AND EFW at 36 weeks remains > P3 AND adequate growth trend of AC AND normal liquor AND reactive CTG – aim to deliver at 39<sup>0</sup>-39<sup>6</sup> weeks (this is SGA and not FGR).
- If no PE but EFW at 36 weeks is < P3 OR clearly slowing growth trend of AC OR reduced liquor (DVP < 2cm): perform CTG
  - CTG persistently non-reactive – consider delivery
  - CTG reactive AND no other indication for an elective preterm delivery: Phone 5572 to arrange a formal reassessment **on the first available Tuesday-Friday**. Management will be informed by the Gratacós criteria.

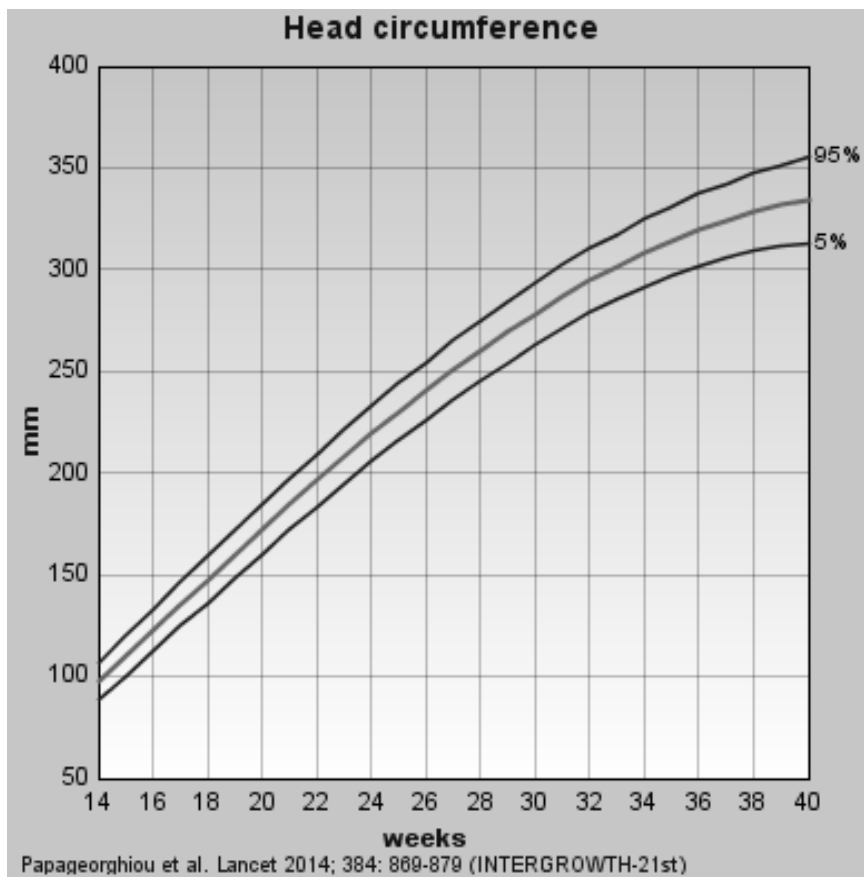
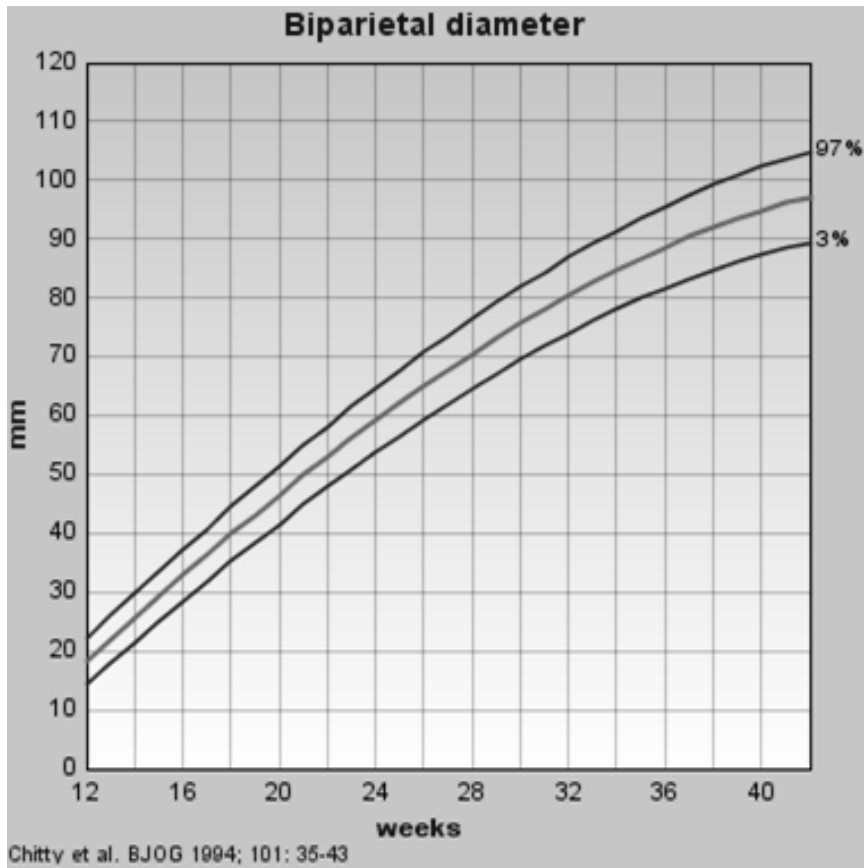
AUTHORISED BY	Prof L Geerts
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DATE REVISED	14 September 2022
DATE EFFECTIVE	1 October 2022
REVIEW DATE	1 October 2025

Signed

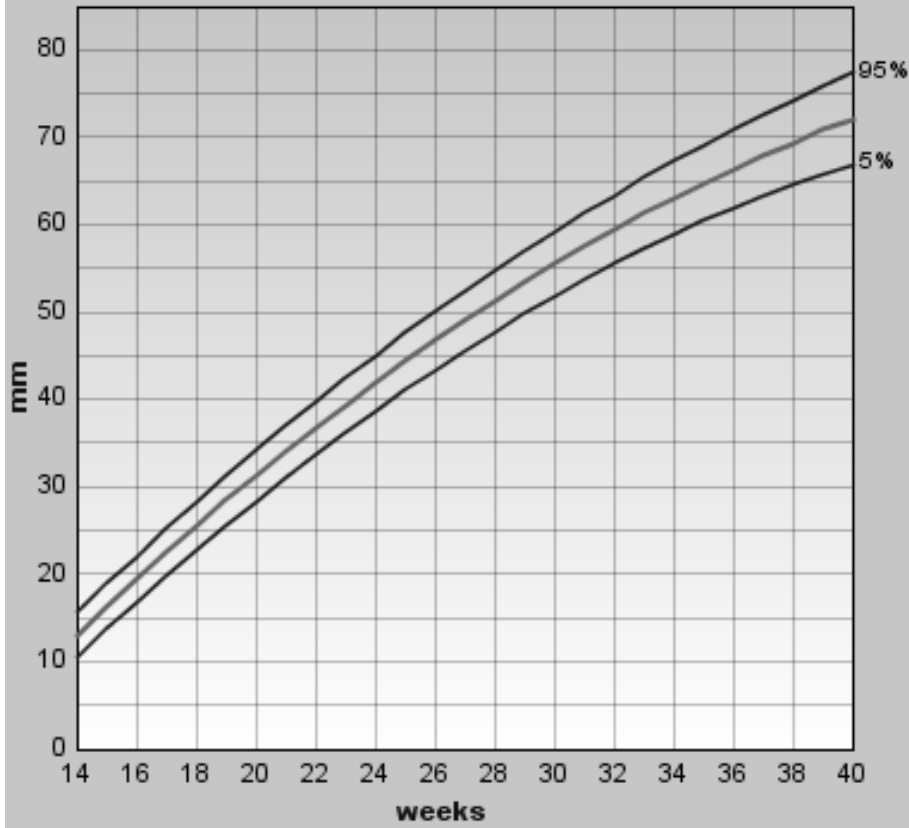
GS Gebhardt



## Recommended biometry reference charts

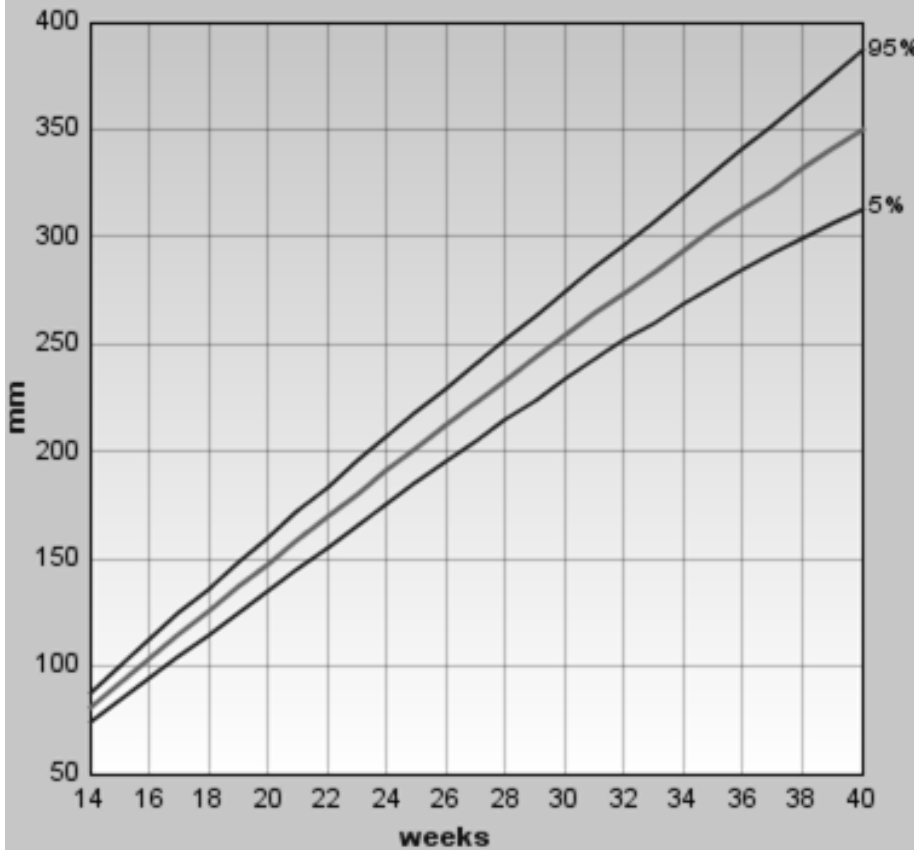


### Femur length



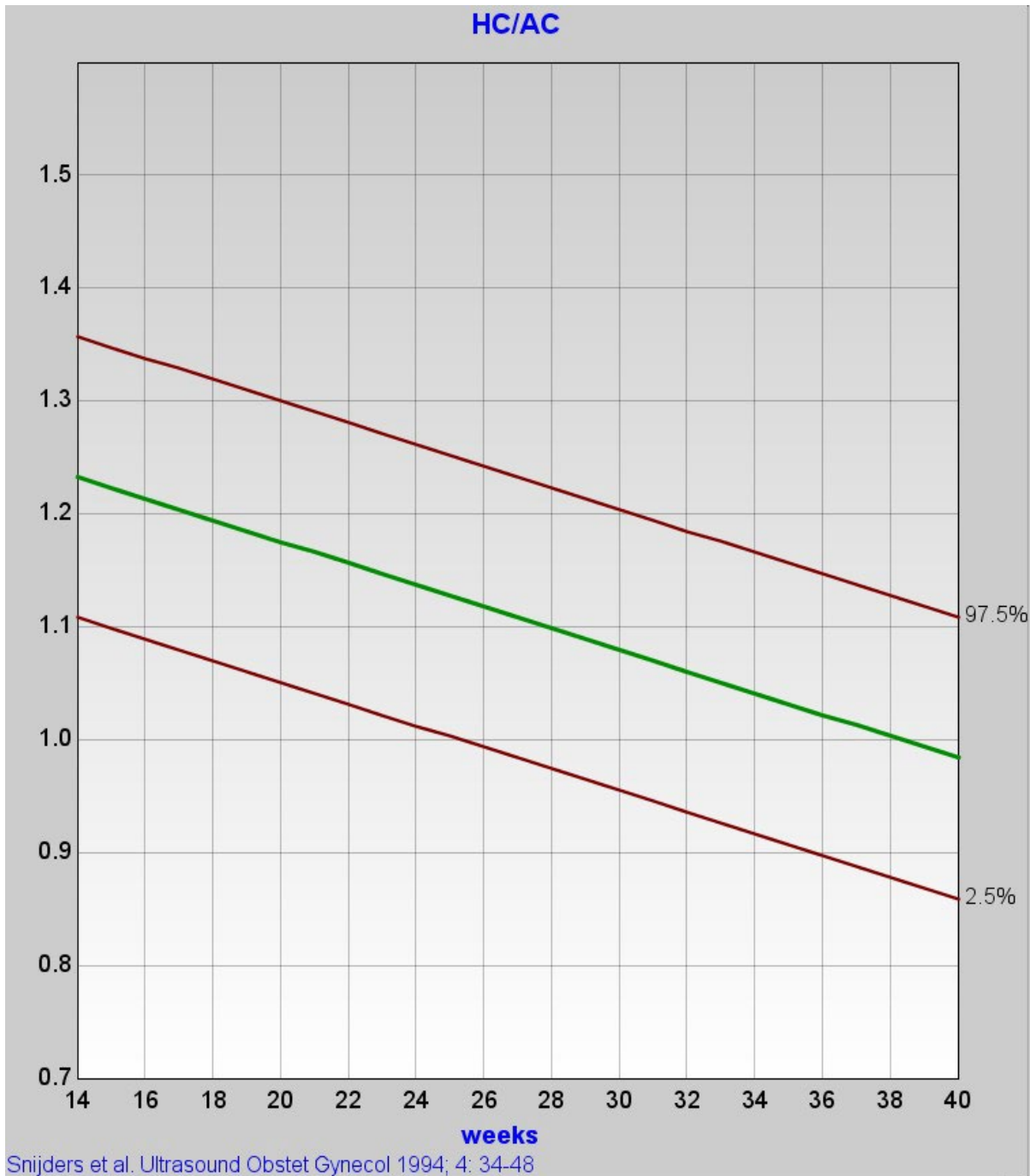
Papageorgiou et al. Lancet 2014; 384: 869-879 (INTERGROWTH-21st)

### Abdominal circumference

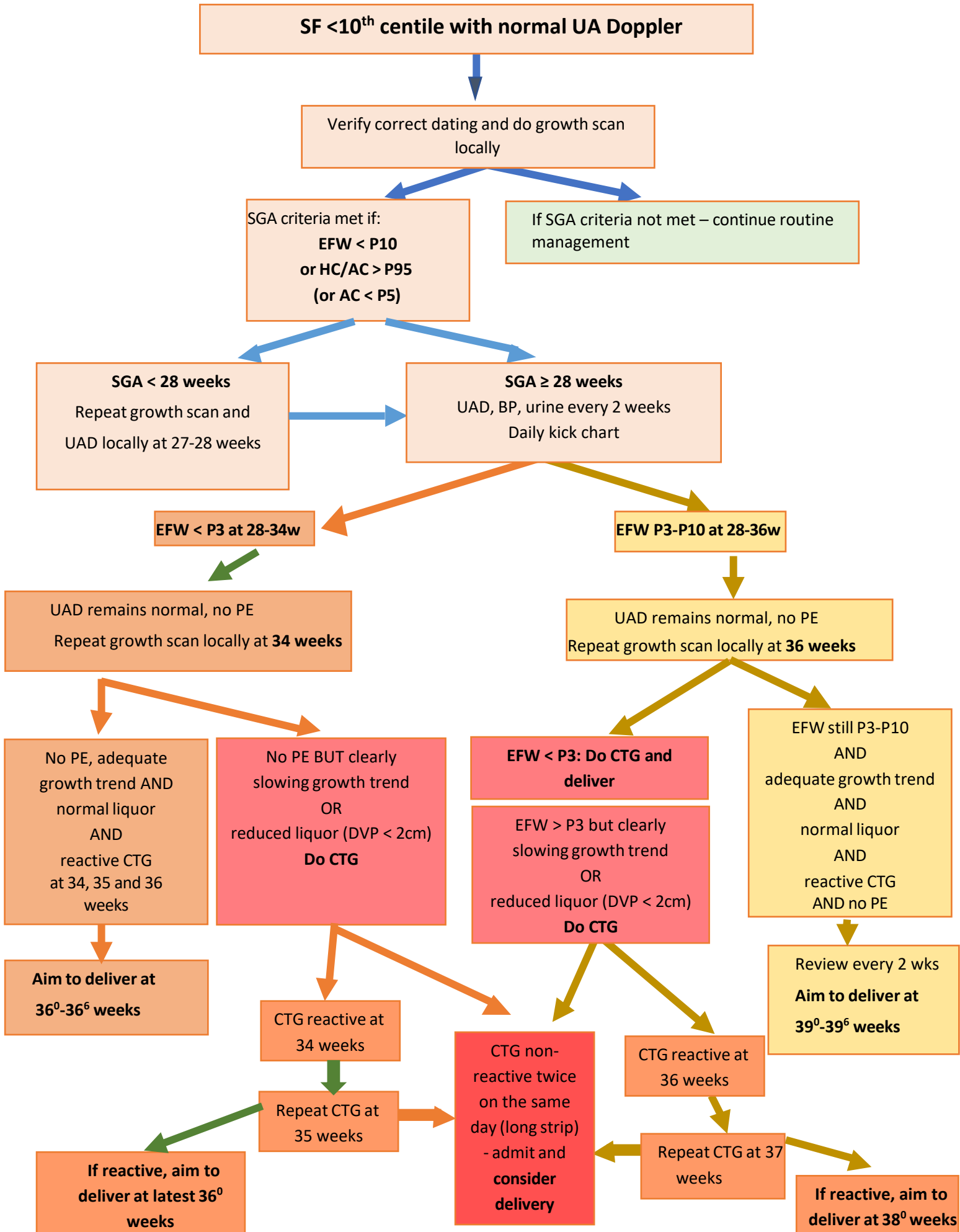


Papageorgiou et al. Lancet 2014; 384: 869-879 (INTERGROWTH-21st)

Recommended HC/AC ratio reference chart



# SGA management at District/Regional Hospital flow chart



**SGA management at TBH flow chart**

**SF <10<sup>th</sup> centile with normal UA Doppler**

Verify correct dating and do growth scan locally

SGA Criteria met If:  
**EFW < P10**  
**or HC/AC > P95**  
**(or AC < P5)**

If SGA criteria not met - continue routine management

**SGA < 28 weeks**  
 Repeat growth scan and UAD locally at 27-28 weeks

**SGA ≥ 28 weeks:**  
 UAD, BP, Urine every 2 weeks  
 Daily kick chart

**EFW <P3 at 28-34wks**

**EFW P3-P10 at 28-36wks**

UAD remains normal, no PE

UAD remains normal, no PE  
 Repeat growth scan at HRC at **36 weeks**

At ~ 34 weeks visit if CTG reactive AND normal UAD AND no other indication for delivery, phone 5572 to arrange assessment at fetal unit on a Thursday closest to 36 weeks. Management will be informed by Gratacós criteria

**EFW < P3 OR**  
**clearly slowing growth trend of AC OR**  
**reduced liquor (DVP < 2cm)**  
**Do CTG**

**EFW still P3-P10**  
**AND**  
**adequate growth trend**  
**AND**  
**normal liquor**  
**AND**  
**reactive CTG**  
**AND no PE**

**CTG non- reactive twice on the same day (long strip) - admit and consider delivery**

**CTG reactive AND normal UAD AND no other indication for an elective preterm delivery, phone 5572 to arrange assessment at fetal unit on the first available Tuesday-Friday. Management will be informed by Gratacós criteria**

**Aim to deliver at 39<sup>0</sup>-39<sup>6</sup> weeks**



Weight reference (Grey: Salomon EFW, closest week; White: Theron, completed weeks)

<b>GIRLS</b>					
	<b>P3</b>	<b>P10</b>	<b>P50</b>	<b>P90</b>	<b>P97</b>
<b>20</b>	296	310	340	369	383
<b>21</b>	322	349	405	461	487
<b>22</b>	353	392	473	555	593
<b>23</b>	395	445	551	657	706
<b>24</b>	453	513	642	771	831
<b>25</b>	528	599	750	900	971
<b>26</b>	624	704	876	1047	1128
<b>27</b>	741	830	1021	1212	1301
<b>28</b>	877	974	1184	1393	1491
<b>29</b>	1029	1135	1362	1589	1695
<b>30</b>	1196	1309	1552	1795	1908
<b>31</b>	1370	1490	1748	2006	2126
<b>32</b>	1545	1672	1944	2215	2342
<b>33</b>	1714	1847	2131	2415	2548
<b>34</b>	1867	2005	2301	2596	2734
<b>35</b>	1993	2136	2442	2747	2890
<b>36</b>	2080	2227	2542	2857	3004
<b>37</b>	2110	2330	2880	3320	3600
<b>38</b>	2280	2500	2970	3510	3780
<b>39</b>	2420	2650	3130	3660	3940
<b>40</b>	2550	2780	3260	3800	4080
<b>41</b>	2650	2890	3370	3920	4200
<b>42</b>	2740	2980	3460	4010	4300

<b>BOYS</b>					
	<b>P3</b>	<b>P10</b>	<b>P50</b>	<b>P90</b>	<b>P97</b>
<b>20</b>	256	279	327	374	397
<b>21</b>	351	377	432	487	513
<b>22</b>	423	453	518	582	612
<b>23</b>	483	519	596	672	708
<b>24</b>	544	586	677	768	811
<b>25</b>	612	663	771	879	929
<b>26</b>	695	755	882	1009	1068
<b>27</b>	797	866	1015	1163	1233
<b>28</b>	917	998	1171	1343	1424
<b>29</b>	1057	1150	1349	1548	1641
<b>30</b>	1212	1318	1546	1774	1880
<b>31</b>	1376	1498	1756	2015	2136
<b>32</b>	1543	1680	1972	2265	2402
<b>33</b>	1701	1855	2183	2512	2666
<b>34</b>	1839	2011	2377	2744	2916
<b>35</b>	1941	2132	2539	2947	3138
<b>36</b>	1990	2202	2652	3103	3314
<b>37</b>	2130	2380	2890	3450	3740
<b>38</b>	2320	2570	3070	3630	3920
<b>39</b>	2490	2730	3240	3790	4080
<b>40</b>	2630	2880	3380	3940	4220
<b>41</b>	2760	3010	3510	4060	4350
<b>42</b>	2880	3120	3620	4170	4460

Weight reference (Grey: Salomon EFW, closest week; White: Theron, completed weeks)

All					
Weeks	P3	P10	P50	P90	P97
20	274	296	343	389	411
21	335	362	419	476	503
22	392	424	493	562	595
23	451	489	572	655	694
24	518	564	660	760	806
25	597	651	767	882	937
26	692	755	890	1024	1087
27	803	876	1031	1187	1259
28	931	1014	1192	1369	1453
29	1073	1168	1369	1571	1666
30	1227	1333	1561	1788	1895
31	1386	1506	1761	2016	2136
32	1546	1680	1964	2248	2382
33	1699	1847	2162	2477	2625
34	1834	1997	2345	2693	2856
35	1942	2121	2503	2886	3065
36	2009	2205	2624	3042	3238
37		2400	2850	3400	
38		2520	3020	3600	
39		2650	3180	3760	
40		2720	3300	3880	
41		2770	3380	3950	
42		2750	3400	4000	