**Supplementary file ‘Supplementary Methods: Dutch Neonatal Screening Method’**

**Title: Nationwide Evaluation of Congenital Hypothyroidism Screening during Neonatal Extracorporeal Membrane Oxygenation**

Authors: Lisette Leeuwen, MD1, Arno F.J. van Heijst, MD PhD2, Sanne Vijfhuize, MD1, Leonardus W.J.E. Beurskens, MD PhD1, Gert Weijman, MD3, Dick Tibboel, MD PhD1, Erica L.T. van den Akker, MD PhD4, Hanneke IJsselstijn, MD PhD1

Journal name: Neonatology

**Dutch Neonatal Screening Method**

In the Netherlands, CH screening is primarily based on T4 measurement by immunochemical assay in blood spots sampled 72-168 hours after birth. The concentration of T4 is compared with the day mean, and expressed a SD score (SDS). If T4 is >-0.8 SDS, the result is normal. If T4 is ≤-0.8 SDS, the TSH concentration (expressed in mU/l blood) is additionally measured. If T4 is ≤-1.6 SDS, the TBG concentration (expressed in nmol/l blood) is additionally measured. A T4/TBG ratio is calculated as follows: (T4 SDS + 5.1) x [TBG]-1 x 1000. If T4 is ≤-3.0 SDS and TBG is >40 nmol/l or TSH is >21 mU/l, the screening result is abnormal, and referral to a pediatrician is indicated (Supplementary Table 1). Before July 2012, a T4≤-3.0 SDS was considered as abnormal and in that case TBG was not determined. Since July 2012, TBG is always determined if T4≤-1.6 SDS. A result indicating TBG deficiency (T4≤-3.0 SDS and TBG≤40 nmol/l) is considered as normal. In case of a borderline result (-3.0< T4≤-0.8 SDS in combination with a T4/TBG ratio≤17 or 7<TSH≤21 mU/l), a second heel puncture is performed. If the second screening result is abnormal or borderline again, the result is considered as abnormal, and referral is indicated.

The referral criterion for premature neonates born ≤36.0 weeks gestation with a birth weight of ≤2500 grams is based on TSH.