

**HYPOTH - Early Origins of Adult Disease Measures April 5 2002**

<b>Measurement Name</b>	<b>Age range (when measured)</b>	<b>Measured in or via....</b>	<b>Why Measured</b>
Demographic, social, economic variables	All points (maternal, child)	multiple questionnaires	Important exposures/covariates for all analyses
Maternal diet	Preconception; Trimester-specific	ffq's for whole cohort; 24-hour recalls for subsets	Determinant of fetal growth, placental function, length of gestation, etc
Infant diet	birth and 3, 6, 12 mo	questionnaire	Determinant of growth, immunity, etc
Child diet	age 1 and yearly	ffq's for whole cohort; observation/24-hour recalls for subsets	Determinant of growth, immunity, etc
Maternal stressors	Preconception; Trimester-specific	multiple questionnaires	Determinants of immunity, metabolism, lifestyle behaviors, etc.
Maternal physiologic stress, eg HPA axis	All trimesters	blood	Determinant of endocrine status
Child physiologic stress, eg HPA axis	Child: age 3, 5, 10, 15, 20	blood	Determinant of endocrine status
IGF-I	Fetus: Second-Third Trimester	blood	Growth Determinant
IGF-II	Fetus: First Trimester	blood	Growth Determinant
IGFBPs (binding proteins)	Fetus: First-Third Trimesters	blood	Growth Determinant
Growth Hormone	Child: 0-18 years (monthly-yearly)	blood	Growth Determinant
GHBP (GH binding protein)	Child: 0-18 years (monthly-yearly)	blood	Growth Determinant
Estradiol	Child: 6-21 years (yearly)	blood	Growth Determinant
Testosterone	Child: 6-21 years (yearly)	blood	Growth Determinant
Fasting Insulin	All points (maternal, child)	blood	Growth Determinant/Health Outcome/Risk Factor
Fasting Glucose	All points (maternal, child)	blood	Growth Determinant/Health Outcome/Risk Factor
Glucose tolerance test	Maternal 2nd trimester, child age 5, 10, 15, 20	blood	Growth Determinant/Health Outcome/Risk Factor
Biparietal Diameter	Fetus: 12-40 weeks	ultrasound	Growth (general)
Femoral Diaphysis Length	Fetus: 12-40 weeks	ultrasound	Growth (general)
Frontal Occipital Diameter	Fetus: 12-40 weeks	ultrasound	Growth (general)
Crown-Rump Length	Fetus: 12-40 weeks	ultrasound	Growth (general)
Abdominal Circumference	Fetus: 12-40 weeks	ultrasound	Growth (general)
Liver volume	Fetus: 12-40 weeks	3D-ultrasound	Growth (organ)
Kidney volume	Fetus: 12-40 weeks	3D-ultrasound	Growth (organ)
Heart volume	Fetus: 12-40 weeks	3D-ultrasound	Growth (organ)
Umbilical cord artery pulsatile flow	Fetus: 3rd trimester	Doppler	Placental vascular sufficiency
Placenta	birth	weight	Placental sufficiency--general marker
Placenta gross morphology	birth	digital images	Marker of vascular/inflammatory processes
Placenta microscopic morphology	birth	slides of sections	Marker of vascular/inflammatory processes
Placenta morphometry	birth	slides of sections	More quantitative measures
Placenta function	birth	flash frozen specimes for mRNA, etc	Functional measures
Weight	Child: 0-21 years; Mother and Father	anthropometry	Growth (general)
Recumbent Length	Child: 0-3 years	anthropometry	Growth (linear)
Stature	Child: 3-21 years; Mother and Father	anthropometry	Growth (linear)
Triceps skinfold	Child: 0-21 years; Mother and Father	anthropometry	Growth (adiposity)/ Health Outcome/Risk Factor

Subscapular skinfold	Child: 0-21 years; Mother and Father	anthropometry	Growth (adiposity)/ Health Outcome/Risk Factor
Suprailiac skinfold	Child: 0-21 years; Mother and Father	anthropometry	Growth (adiposity)/ Health Outcome/Risk Factor
Thigh skinfold	Child: 0-21 years; Mother and Father	anthropometry	Growth (adiposity)/ Health Outcome/Risk Factor
Abdominal Circumference	Child: 0-21 years; Mother and Father	anthropometry	Growth (adiposity)/ Health Outcome/Risk Factor
Mid-upper arm circumference	Child: 0-21 years; Mother and Father	anthropometry	Growth (muscle) (not needed if DXA avail.)
Mid-thigh circumference	Child: 0-21 years; Mother and Father	anthropometry	Growth (muscle) (not needed if DXA avail.)
Total Body Fat	Child: 0-21 years; Mother and Father; Selected Visits	DXA	Growth (adiposity)/ Health Outcome
Total Lean Mass	Child: 0-21 years; Mother and Father; Selected Visits	DXA	Growth (lean)/Health Outcome/Risk Factor
Left Ventricular Mass, other Cardiac parameters	Child: 0-21 years; Mother and Father; Selected Visits	ultrasound	Growth (lean)/Health Outcome/Risk Factor
Kidney volume	Child: 0-21 years; Mother and Father; Selected Visits	ultrasound	Growth (lean)/Health Outcome/Risk Factor
Liver volume	Child: 0-21 years; Mother and Father; Selected Visits	ultrasound	Growth (lean)/Health Outcome/Risk Factor
Abdominal Visceral Adipose Tissue	Child: 0-21 years; Mother and Father; Selected Visits	CT or MRI	Health Outcome/Risk Factor
Lipids, Lipoproteins, and Lipoprotein Subfractions	Child: 0-21 years; Mother and Father; Selected Visits	blood	Health Outcome/Risk Factor
Pulse, Blood Pressure	Child: 0-21 years; Mother and Father; Selected Visits	physical exam	Health Outcome/Risk Factor
Inflammatory Markers	Child: 0-21 years; Mother and Father; Selected Visits	blood	Health Outcome/Risk Factor
IL1, IL6, IL4, IL10, IL13, gIFN, ILI2	Fetus: delivery	cord blood + cord monocytes	Inflammatory markers
TNF alpha	Fetus: delivery	cord blood + cord monocytes	Inflammatory markers
Chorioamnionitis	Fetus: delivery	placental bx	Amnion/Chorion infection
Cognitive/behavioral testing	Child 0-21 years; selected visits	interview	Health Outcome/Risk Factor
CD14	Fetus: delivery	cord blood	Inflammatory markers
CD14 polymorphism@158 TT	Fetus: delivery	cord blood	Inflammatory markers
GMCSF	Fetus: delivery	cord blood	Inflammatory markers
Telomere length	Fetus: delivery; child 0-21 years: selected visits	urine?	Growth (retarded prenatal; accelerated postnatal)
Vascular reactivity	Child 0-21 years; selected visits	physical exam	Health Outcome/Risk Factor
Atopy - eczema	Child 0-21 years; selected visits	physical exam	Health Outcome/Risk Factor
Atopy - serum IgE, eosinophil counts	Child 0-21 years; selected visits	peripheral blood	Health Outcome/Risk Factor
Pulmonary function	Child 0-21 years; selected visits	pulmonary testing	Health Outcome/Risk Factor
Atopic outcomes--asthma, atopic dermatitis, allergic rhinitis	Child 0-21 years; selected visits	questionnaires	Health Outcome
bone mass	child: 0-20 years, select visits	DXA	outcome measure/riskfactor
femor length	fetus 12-40 weeks	ultrasound	growth measure
leg length	child: 0-20 years, annually	anthropometry	growth measure

sitting height	child: 2-20 years, annually	anthropometry	growth measure
recumbent length	child: 0-20 years, annually	anthropometry	growth measure
stature	child: 2-20 years, annually	anthropometry	growth measure
weight	child: 0-20 years, annually	anthropometry	growth measure
total lean mass	child: 0-20 years, select visits	DXA	growth measure/bone mass determinant
gestational age	birth		growth determinant
sexual maturation	child, 6-17 years, annually	physical exam	bone determinant/hormonally responsive cancers
age at menarche	child: 9-16 years, annually	questionnaire	bone determinant/hormonally responsive cancers
ovarian function/menstrual regularity	child: 9-20 years, annually	questionnaire	bone determinant/hormonally responsive cancers
hormonal contraceptive use	child: 12-20 years, annually	questionnaire	bone mass determinant
pregnancy history	child: 12-20 years, annually	questionnaire	bone mass determinant
physical activity-bone loading	child: 0-20 years, annually	questionnaire?	bone mass determinant
physical activity-energy expenditure	child: 0-20 years, annually	questionnaire?	growth/obesity determinant
physical inactivity	child: 0-20 years, annually	questionnaire	bone/growth determinant
dietary intake	child: 0-20 years, annually	questionnaire	bone/growth determinant
dietary intake	mother: during pregnancy	questionnaire	fetal growth determinant
sun exposure-maternal	throughout pregnancy	questionnaire	bone mass determinant
sun exposure-child	child: 0-20 years, annually	questionnaire	bone mass determinant
fracture occurrence	child: 0-20 years, annually	questionnaire	outcome measure/riskfactor
chronic illness	child: 0-20 years, annually	questionnaire	bone/growth determinant
chronic medication usage	child: 0-20 years, annually	questionnaire	bone/growth determinant
depression	??	??	
DNA/genotype	once	blood	
SOD	at birth	cord blood	early disease predictors
GSTs	at birth	cord blood	early disease predictors
persistent EDCs	birth/infant timepoint/12 yr old	cord blood & surr tissue/blood	early exposures
PFOS	birth/infant timepoint/12 yr old	cord blood & surr tissue/blood	early exposures
PBDE	birth/infant timepoint/12 yr old	cord blood & surr tissue/blood	early exposures
TCDD	birth/infant timepoint/12 yr old	cord blood & surr tissue/blood	early exposures
PBBs	birth/infant timepoint/12 yr old	cord blood & surr tissue/blood	early exposures
PAHs	birth/infant timepoint/12 yr old	cord blood & surr tissue/blood	early exposures
isoflavonoids	birth/infant timepoint/12 yr old	cord blood & surr tissue/blood	early exposures
PCBs	birth/infant timepoint/12 yr old	cord blood & surr tissue/blood	early exposures
Topo II inhibitors	birth/infant timepoint/12 yr old	cord blood & surr tissue/blood	early exposures
Repro Endpoints	yearly checks	child	reproductive health status
start menarche	year and month	child and mother	reproductive health status

regular cycles	year and month	child and mother	reproductive health status
			reproductive health status
Tanner scores	as measured typically	child	reproductive health status
breast development	year and month (girl and boys)	child	reproductive health status
repro organs	any irregularities?	child and mother/father	reproductive health status
libido	sexually active? Practices?	child and mother/father	reproductive health status
fertility	if any info, collect it	child and mother/father	reproductive health status
inflam. diseases	PCOS, endometriosis, BPH	child and mother/father	reproductive health status
STDs	assay for them and question	child and mother/father	reproductive health status
voice breaks			reproductive health status
start	year and month	child	reproductive health status
end	year and month	child	reproductive health status
Uterine/ov ultrasound	16 years old	child	reproductive health status
aggression	question	ask child and parents	mental health status
mood swings	question	ask child and parents	mental health status
depression	question	ask child and parents	mental health status
eating disorders	question	ask child and parents	mental health status
Sun susceptibility assessment	Age 5 and 10	questionnaire and exam	risk factor
Nevi and dyplastic nevi	Age 5,10,15, 20	clinical exam	risk factor, precursor lesion
Sun Exposure	Annual	questionnaire and exam	risk factor
Recreational activities	Annual	questionnaire	sun exposure/risk factor
Clothing coverage	Age 5,10,15, 20	questionnaire	sun exposure/risk factor
Ability to tan	Age 5, 10	questionnaire mother/child	risk factor
Family history of Malignant Melanoma	Once	questionnaire mother	risk factor
DNA collection	Once	blood child	genetic susceptibility, gene-environment interactions