Methods:

Anthropometry

Height was recorded without shoes to the nearest 0.1 cm using a fixed stadiometer. Weight was measured with minimal clothing on, without shoes, to the nearest 0.1 kg using digital scales. Subscapular and triceps skinfolds were measured using a Holtain Skinfold Caliper. Waist circumference was measured with a tape on bare skin with the participant in a standing position.

Blood samples

Blood for serum bone markers 25-hydroxy vitamin D, (25(OH)D)), 1,25 dihydroxy-vitamin D (1,25(OH)D), insulin-like growth factor 1 (IGF-1), insulin-like growth factor-binding protein 3 (IGFBP-3) and parathyroid hormone (PTH) were drawn at the consultation, centrifugated within 1 hour and separated before the serum were stored in a frozen biobank holding -80 $^{\circ}$C. In 2015, the serum was later analyzed in one run at the hormone laboratory at Haukeland University hospital. 25(OH)D was analyzed by liquid chromatography coupled with tandem mass spectrometry (LC-MS/MS, In-house method.) (32). 1,25(OH)2vitD was determined by radioimmunoassay from Immunodiagnostic Systems. IGF-1 level, IGFBP-3 and PTH levels were determined using chemiluminescence immunometric assay from Siemens IMMULITE 2000.

In 2018, stored serum was analyzed in one run to obtain values for testosterone, estradiol, luteinizing hormone (LH) and follicle-stimulating hormone (FHS). Estradiol and testosterone were analyzed by LC-MS/MS (In-house method) and LH and FSH by chemiluminescence immunometric assay, Siemens IMMULITE 2000.

Supplementary table 1 Anthropometry and body composition parameters results according to weight percentile at birth for the 54 extremely preterm or extremely low birthweight children born in the Western Norway Health Region in 1999 – 2000 that were examined in 2010-11

Variables, (*units*), *statistic*	SGA	m	Not SGA	m	p [a)]
Total subjects, *n*	20		34		
Male gender, *n*	13	0	15	0	.14
Gestational age (weeks), *median, (range)*	28 (24-27)	0	26 (24-31)	0	< .001
Birthweight (g), *mean (SD)*	724 (143)	0	910 (155)	0	< .001
Anthropometry					
Height (cm), *mean (SD)*	142.6 (6.0)	0	149.2 (8.0)	0	.002
Height, z-score, *mean (SD)*	-0.96 (0.98)	0	-0.09 (0.97)	0	.002
Weight (kg), *mean (SD)*	36.2 (8.9)	0	39.8 (7.8)	0	.12
Weight, z-score, *mean (SD)*	-0.66 (1.18)	0	-0.15 (0.99)	0	.17
BMI (kg/m^2), *mean (SD)*	17.6 (3.1)	0	17.7 (2.3)	0	.90
BMI, z-score, *mean (SD)*	-0.24 (1.15)	0	-0.16 (1.01)	0	.78
Waist circumference (mm), *mean (SD)*	65.1 (8.9)	0	65.5 (7.7)	3	.87
Subscapular fold (mm), *mean (SD)*	9.1 (4.4)	0	8.4 (3.7)	4	.59
Triceps skinfold (mm), *mean (SD)*	11.1 (4.1)	1	11.4 (4.2)	4	.79
STR, *mean (SD)*	0.82 (0.30)	1	0.76 (0.19)	4	.33
WHtR, *mean (SD)*	0.46 (0.05)	0	0.44 (0.04)	3	.16
DXA					
Fat mass (kg), *mean (SD)*	8.6 (5.4)	3	9.6 (4.7)	4	.49
Total body fat (%), *mean (SD)*	25.7 (8.0)	3	26.1 (9.6)	4	.88
FMI (kg/m^2), *mean (SD)*	4.1 (2.3)	3	4.3 (2.0)	4	.82
Fat mass ratio, *mean (SD)*	1.12 (0.25)	4	1.11 (0.17)	5	.93
Lean body mass (kg), *mean (SD)*	22.9 (3.7)	3	25.6 (4.6)	4	.045
LBMI (kg/m^2), *mean (SD)*	11.2 (1.1)	3	11.4 (1.1)	4	.51
ALM (kg), *mean (SD)*	11.0 (1.6)	5	12.6 (2.5)	7	.03
ALMI (kg/m^2), *mean (SD)*	5.3 (0.4)	5	5.6 (0.6)	7	.19
BMC (g), *mean (SD)*	966 (230)	3	1168 (248)	4	.009
BMD (g/cm^2), *mean (SD)*	0.779 (0.063)	3	0.826 (0.065)	4	.02
BMD, z-score	-0.29 (0.69)	3	0.06 (0.60)	4	.07
BMDth left (g/cm^2), *mean (SD)*	0.800 (0.075)	3	0.859 (0.086)	4	.02
BMDth left, z-score, *mean (SD)*	-0.29 (0.67)	3	0.06 (0.75)	4	.12
BMDth right (g/cm^2), *mean (SD)*	0.798 (0.067)	3	0.853 (0.083)	4	.02
BMDth right, z-score, *mean (SD)*	-0.32 (0.59)	3	0.01 (0.74)	4	.12
BMD spine (g/cm^2), *mean (SD)*	0.762 (0.075)	3	0.856 (0.010)	4	.002
BMD spine, z-score, *mean (SD)*	-0.38 (0.60)	3	0.12 (0.69)	4	.02

Abbreviations: ALM: appendicular lean mass; ALMI: appendicular lean mass index; BMC: bone mineral content; BMD: bone mineral density; BMDth: total hip BMD; DXA: Dual-energy X-ray absorptiometry; FMI: fat mass index; Fat mass ratio: (arms + legs fat mass)/truncal fat mass; LBMI: lean body mass index; m: missing; SGA: small for gestational age; SD: standard deviation; STR: subscapular- triceps skinfold ratio; WHtR: waist to height ratio.

a) Independent sample t-test or Mann-Whitney U test as appropriate.

Supplementary table 2 Comparing sex hormone and d-vitamin level between the extremely preterm/extremely low birthweight born children and their age- and gender matched term-born controls (TB) born year 1999 – 2000 in the Western Norway Health Region and examined in 2010-11

Hormone, *unit*	All					Female						Male					
	EP/ELBW n = 50		TB n = 48			EP/ELBW n = 25		TB n = 22				EP/ELBW n = 25		TB n = 26			
	Mean	SD	Mean	SD	*p*a)	Mean	SD	Mean	SD	m	*P*b)	Mean	SD	Mean	SD	m	*P*c)
D-vit, *nmol/L*	52.1	17.2	54.0	16.4	.43	54.0	16.0	52.0	16.2	2	.78	50.2	18.5	55.6	16.7	2	.21
Testosterone, *nmol/L*	1.8	3.5	1.3	2.3	.56	-	-	-	-	-	-	1.8	3.5	1.3	2.3	3	.56
Estradiol, *pmol/L*	88.3	96.2	74.6	80.3	.79	88.3	96.2	74.6	80.3	18	.79	-	-	-	-	-	-
LH, *IE/L*	1.2	1.3	1.2	1.2	.95	1.9	1.6	1.8	1.6	17	.96	0.78	0.70	0.84	0.62	8	.72
FSH, *IE/L*	2.4	1.5	2.6	1.6	.56	3.2	1.6	3.8	1.	13	.29	1.8	1.2	1.8	1.1	4	.98

Abbreviations D-vit: 25(OH)D vitamin; EP/ELBW: extremely preterm/extremely low birthweight; LH: luteinizing hormone FSH: follicle-stimulating hormone; m: missing; SD; standard deviation.

a) p-value for differences between the EP/ELBW and TB by mixed linear model

b) p- value for differences between the female EP/ELBW and TB by mixed linear model

c) p- value for differences between the female EP/ELBW and TB by mixed linear model