

## Supplementary Online Content

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This supplementary material has been provided by the authors to give readers additional information about their work.

**eTable 1. International Classification of Diseases (ICD) Codes for Diagnoses in the AYA HOPE Comorbidity Index**

Comorbidity	ICD-8 (1973-1986)	ICD-9 (1987-1996)	ICD-10 (1997-2015)
<b>Cardiovascular</b>			
Hypertension	400-404	401-405	I10-I15
Ischemic heart disease	410-414	410-414	I20-I25
Pericarditis	420	420	I30, I32
Other diseases of pericardium	423	423	I31
Valve disorders	424	424	I34-I39
Arrhythmias	427.2-427.9	427	I47-I49
Congestive heart failure	427.0-427.1	428	I11.0, I13.0, I13.2, I50
Thromboembolic disease	444, 452-453	415.1, 444, 452-453	I26, I81-I82
Other peripheral vascular disease	440-443, 445-448	440-443, 445-448	I70-I79, K55, Z95.8, Z95.9
<b>Endocrine</b>			
Diabetes mellitus	250	250	E10-E14
Thyroid disorders	240-246	240-246	E00-E07
Pituitary disorders	253	253	E22-E23
Lipid disorders	272	272	E78
<b>Gastrointestinal</b>			
Cholelithiasis	574	574	K80
Esophagitis	530.1	530.1	K20
Ulcer disease	531-534	531-534	K25-K28
Gastritis/colitis	535, 561, 563	535, 555-556, 558	K29, K50-K52
Irritable bowel disease	564.1	564.1	K58
Pancreatitis	577.0-577.1	577.0-577.1	K85-K86.1
<b>Hematologic</b>			
Von Willebrand disease	--	286.4	D68.0
Immune thrombocytopenic purpura	--	287.31	D69.3
<b>Hepatic</b>			
Viral hepatitis	070	070	B15-B19
Non-alcoholic cirrhosis	571.8-571.9	571.5	K74
Other non-alcoholic liver disease	573	571.8-571.9	K71-K73, K75-K76
<b>HIV/AIDS</b>			
	--	042	B20-B24
<b>Mental health</b>			
Mood disorders	296	296, 311	F30-F39
Anxiety disorders	300.0	300.0	F40-F41
Schizophrenia	295	295	F20
Attention deficit disorder	--	314.0	F90
Mental delay	310-315	317-319	F70-F79
<b>Neurological</b>			
Cerebrovascular disease	430-438	430-438	I60-I69
Chronic pain	--	338.2	R52.1-R52.2
Migraine headaches	346	346	G43
Multiple sclerosis	340	340	G35
Cerebral palsy	343	343	G80
Epilepsy	345	345	G40-G41
Peripheral neuropathy	357	356	G60-G64
Specific developmental disorders	--	315	F80-F83
<b>Obesity</b>			
	277	278.0	E66
<b>Renal</b>			
	582-583	582-583, 585-587	N00-N19, Z94.0
<b>Respiratory</b>			
Asthma	493	493	J45
COPD	491-492	491-492, 494, 496	J41-J44
<b>Rheumatologic/autoimmune</b>			
	712, 716	710, 714, 725	M05, M06, M31-M36

AYA HOPE = Adolescent and Young Adult Health Outcomes and Patient Experience

**eTable 2. International Classification of Diseases (ICD) Codes for Diagnoses in the Charlson Comorbidity Index (CCI)**

Comorbidity	ICD-8 (1973-1986)	ICD-9 (1987-1996)	ICD-10 (1997-2015)
1. Myocardial infarction	410	410, 412	I21, I22, I25.2
2. Congestive heart failure	427.0, 427.1	428	I11.0, I13.0, I13.2, I50
3. Peripheral vascular disease	440-448	440-448, 557, 785.4	I70-I79, K55, Z95.8, Z95.9
4. Cerebrovascular disease	430-438	430-438	G45, G46, I60-I69
5. Dementia	290	290	F00-F03, F05.1, G30, G31.1
6. Chronic pulmonary disease	490-493, 515-518	490-496, 500-505, 506.4, 770.7	J40-J47, J60-J67, J68.4, J70.1, J70.3, P27
7. Connective tissue disease	712, 716	710, 714, 725	M05, M06, M31-M36
8. Ulcer disease	531-534	531-534	K25-K28
9. Mild liver disease	571	571	K70.0-K70.3, K70.9, K71.3-K71.5, K71.7, K73, K74, K76.0, K76.2-K76.4, K76.8, K76.9
10. Diabetes	250	250-250.3, 250.7	E10.0, E10.1, E10.6, E10.8-E11.1, E11.6, E11.8-E12.1, E12.6, E12.8-E13.1, E13.6, E13.8-E14.1, E14.6, E14.8, E14.9
11. Hemiplegia/paraplegia	343.0, 344.1-344.2	342, 344.1	G04.1, G11.4, G80.1, G80.2, G81, G82, G83.0-G83.4, G83.9
12. Moderate/severe renal disease	582-583	582-583, 585-586, 588	I12.0, I13.1, N03.2-N03.7, N05.2-N05.7, N18, N19, N25.0, Z49, Z94.0, Z99.2
13. Diabetes with end-organ damage	--	250.4-250.6	E10.2-E10.5, E10.7, E11.2-E11.5, E11.7, E12.2-E12.5, E12.7, E13.2-E13.5, E13.7, E14.2-E14.5, E14.7
14. Any tumor	140-172, 174-195	140-172, 174-195	C00-C43, C45-C76, C97
15. Leukemia	203-209	203-208	C90-C96
16. Lymphoma	200-202	200-202	C81-C88
17. Moderate/severe liver disease	456.0	456.0-456.2, 572.2-572.8	I85, I86.4, I98.2, K70.4, K71.1, K72.1, K72.9, K76.5-K76.7
18. Metastatic solid tumor	196-199	196-199	C77-C80
19. AIDS	--	042	B20-B24

**eTable 3. Unadjusted Prevalence Ratios for Survival Without Major Comorbidities in Adulthood by Gestational Age at Birth and Birth Year, Sweden**

Gestational age at birth	Survival and AYA HOPE=0 <sup>a</sup>		Survival and CCI=0 <sup>b</sup>	
	Unadjusted PR (95% CI)	Adjusted <sup>c</sup> PR (95% CI)	Unadjusted PR (95% CI)	Adjusted <sup>c</sup> PR (95% CI)
<b>All births in 1973-1997 (attained ages 18-43; median 29.8 yrs)</b>				
Preterm (<37 wks)	0.87 (0.86, 0.87)	0.86 (0.85, 0.86)	0.89 (0.89, 0.90)	0.89 (0.89, 0.89)
Extremely preterm (22-27 wks)	0.35 (0.34, 0.37)	0.35 (0.33, 0.36)	0.40 (0.38, 0.41)	0.39 (0.38, 0.41)
Very preterm (28-33 wks)	0.77 (0.76, 0.78)	0.76 (0.75, 0.77)	0.81 (0.80, 0.82)	0.81 (0.80, 0.81)
Late preterm (34-36 wks)	0.92 (0.92, 0.93)	0.91 (0.91, 0.92)	0.94 (0.94, 0.95)	0.94 (0.94, 0.94)
Early term (37-38 wks)	0.97 (0.97, 0.97)	0.97 (0.96, 0.97)	0.98 (0.98, 0.98)	0.98 (0.98, 0.98)
Full-term (39-41 wks)	Reference	Reference	Reference	Reference
Post-term (≥42 wks)	0.99 (0.98, 0.99)	1.00 (0.99, 1.00)	1.00 (0.99, 1.00)	1.00 (1.00, 1.00)
Per additional week	1.02 (1.02, 1.02)	1.02 (1.02, 1.02)	1.02 (1.02, 1.02)	1.02 (1.02, 1.02)
<b>Born in 1973-1979 (attained ages 36-43; median 39.7 yrs)</b>				
Preterm (<37 wks)	0.85 (0.84, 0.86)	0.84 (0.83, 0.85)	0.88 (0.87, 0.88)	0.87 (0.87, 0.88)
Extremely preterm (22-27 wks)	0.25 (0.22, 0.29)	0.25 (0.21, 0.28)	0.26 (0.24, 0.30)	0.26 (0.23, 0.29)
Very preterm (28-33 wks)	0.71 (0.69, 0.73)	0.69 (0.68, 0.71)	0.76 (0.74, 0.77)	0.75 (0.74, 0.77)
Late preterm (34-36 wks)	0.92 (0.91, 0.93)	0.91 (0.90, 0.92)	0.94 (0.93, 0.95)	0.94 (0.93, 0.94)
Early term (37-38 wks)	0.98 (0.97, 0.98)	0.96 (0.96, 0.97)	0.99 (0.98, 0.99)	0.98 (0.98, 0.98)
Full-term (39-41 wks)	Reference	Reference	Reference	Reference
Post-term (≥42 wks)	0.99 (0.98, 0.99)	1.00 (1.00, 1.01)	1.00 (0.99, 1.00)	1.00 (1.00, 1.00)
Per additional week	1.02 (1.02, 1.02)	1.02 (1.02, 1.02)	1.02 (1.01, 1.02)	1.02 (1.02, 1.02)
<b>Born in 1980-1989 (attained ages 26-35; median 30.7 yrs)</b>				
Preterm (<37 wks)	0.88 (0.87, 0.89)	0.87 (0.87, 0.88)	0.91 (0.90, 0.91)	0.91 (0.90, 0.91)
Extremely preterm (22-27 wks)	0.36 (0.33, 0.39)	0.36 (0.33, 0.39)	0.41 (0.38, 0.43)	0.41 (0.38, 0.43)
Very preterm (28-33 wks)	0.78 (0.77, 0.80)	0.78 (0.76, 0.79)	0.83 (0.82, 0.84)	0.83 (0.82, 0.83)
Late preterm (34-36 wks)	0.93 (0.92, 0.94)	0.92 (0.91, 0.93)	0.95 (0.95, 0.96)	0.95 (0.94, 0.95)
Early term (37-38 wks)	0.97 (0.97, 0.98)	0.97 (0.96, 0.97)	0.98 (0.98, 0.99)	0.98 (0.98, 0.99)
Full-term (39-41 wks)	Reference	Reference	Reference	Reference
Post-term (≥42 wks)	0.99 (0.99, 1.00)	0.99 (0.99, 1.00)	1.00 (1.00, 1.00)	1.00 (1.00, 1.00)
Per additional week	1.02 (1.02, 1.02)	1.02 (1.02, 1.02)	1.01 (1.01, 1.02)	1.02 (1.01, 1.02)
<b>Born in 1990-1997 (attained ages 18-25; median 22.5 yrs)</b>				
Preterm (<37 wks)	0.86 (0.85, 0.86)	0.85 (0.85, 0.86)	0.89 (0.88, 0.89)	0.89 (0.88, 0.89)
Extremely preterm (22-27 wks)	0.39 (0.37, 0.42)	0.39 (0.36, 0.41)	0.45 (0.43, 0.48)	0.45 (0.43, 0.47)
Very preterm (28-33 wks)	0.79 (0.77, 0.80)	0.78 (0.76, 0.79)	0.83 (0.82, 0.84)	0.82 (0.81, 0.83)
Late preterm (34-36 wks)	0.91 (0.90, 0.92)	0.90 (0.89, 0.91)	0.93 (0.93, 0.94)	0.93 (0.92, 0.94)
Early term (37-38 wks)	0.96 (0.96, 0.96)	0.96 (0.96, 0.96)	0.98 (0.97, 0.98)	0.98 (0.97, 0.98)
Full-term (39-41 wks)	Reference	Reference	Reference	Reference
Post-term (≥42 wks)	1.00 (0.99, 1.01)	1.00 (0.99, 1.00)	1.00 (1.00, 1.01)	1.00 (1.00, 1.01)
Per additional week	1.02 (1.02, 1.02)	1.02 (1.02, 1.02)	1.02 (1.02, 1.02)	1.02 (1.02, 1.02)

<sup>a</sup>Survival without any comorbidities in the AYA HOPE Comorbidity Index through 2015.

<sup>b</sup>Survival without any comorbidities in the Charlson Comorbidity Index through 2015.

<sup>c</sup>Adjusted for child characteristics (birth year, sex, fetal growth, multiple birth, birth order) and maternal characteristics (age, education, smoking, preeclampsia, other hypertensive disorders, diabetes).

AYA HOPE = Adolescent and Young Adult Health Outcomes and Patient Experience, CCI = Charlson Comorbidity Index, PR = prevalence ratio

**eTable 4. Prevalence of Survival Without Major Comorbidities at Age 18 Years by Gestational Age at Birth and Birth Year, Sweden**

Gestational age at birth	Total births	Alive at age 18 yrs	Survival and AYA HOPE=0 <sup>a</sup>		Survival and CCI=0 <sup>b</sup>	
	N	%	%	PR (95% CI) <sup>c</sup>	%	PR (95% CI) <sup>c</sup>
<b>All births in 1973-1997</b>	2,566,699	99.1	85.5		84.6	
Preterm (<37 wks)	149,065	94.2	76.6	0.89 (0.89, 0.89)	76.9	0.90 (0.90, 0.90)
Extremely preterm (22-27 wks)	5,391	51.3	31.4	0.37 (0.35, 0.38)	36.3	0.42 (0.41, 0.44)
Very preterm (28-33 wks)	33,025	89.5	68.4	0.80 (0.79, 0.80)	70.9	0.83 (0.82, 0.83)
Late preterm (34-36 wks)	110,649	97.7	81.3	0.94 (0.94, 0.95)	80.7	0.94 (0.94, 0.95)
Early term (37-38 wks)	447,249	99.1	84.0	0.98 (0.98, 0.98)	83.8	0.98 (0.98, 0.98)
Full-term (39-41 wks)	1,742,809	99.4	86.2	Reference	85.3	Reference
Post-term (≥42 wks)	227,576	99.3	88.1	1.00 (1.00, 1.00)	85.5	1.00 (1.00, 1.00)
Per additional week				1.02 (1.02, 1.02)		1.02 (1.01, 1.02)
<b>Born in 1973-1979</b>	699,473	98.8	94.9		85.9	
Preterm (<37 wks)	35,636	91.1	85.8	0.90 (0.89, 0.90)	77.2	0.89 (0.88, 0.89)
Extremely preterm (22-27 wks)	1,155	30.0	26.6	0.28 (0.25, 0.30)	24.9	0.29 (0.26, 0.32)
Very preterm (28-33 wks)	7,869	81.3	74.5	0.78 (0.77, 0.79)	67.7	0.78 (0.77, 0.79)
Late preterm (34-36 wks)	26,612	96.6	91.7	0.96 (0.95, 0.96)	82.3	0.95 (0.94, 0.95)
Early term (37-38 wks)	98,895	98.8	94.6	0.99 (0.99, 0.99)	85.4	0.98 (0.98, 0.99)
Full-term (39-41 wks)	475,210	99.3	95.6	Reference	86.6	Reference
Post-term (≥42 wks)	89,732	99.2	95.4	1.00 (1.00, 1.00)	86.3	1.00 (1.00, 1.01)
Per additional week				1.01 (1.01, 1.01)		1.02 (1.02, 1.02)
<b>Born in 1980-1989</b>	989,229	99.1	89.6		86.0	
Preterm (<37 wks)	60,203	94.7	82.1	0.91 (0.91, 0.91)	79.4	0.91 (0.91, 0.92)
Extremely preterm (22-27 wks)	1,957	50.9	35.6	0.39 (0.37, 0.42)	38.3	0.44 (0.42, 0.47)
Very preterm (28-33 wks)	12,760	90.2	73.9	0.82 (0.81, 0.83)	73.7	0.85 (0.84, 0.86)
Late preterm (34-36 wks)	45,486	97.9	86.4	0.96 (0.95, 0.96)	82.7	0.95 (0.95, 0.96)
Early term (37-38 wks)	186,892	99.2	88.8	0.98 (0.98, 0.99)	85.4	0.98 (0.98, 0.99)
Full-term (39-41 wks)	665,583	99.5	90.4	Reference	86.7	Reference
Post-term (≥42 wks)	76,551	99.3	90.7	1.00 (0.99, 1.00)	86.7	1.00 (1.00, 1.00)
Per additional week				1.01 (1.01, 1.02)		1.01 (1.01, 1.01)
<b>Born in 1990-1997</b>	877,997	99.3	73.1		81.8	
Preterm (<37 wks)	53,226	95.7	64.2	0.86 (0.86, 0.87)	74.0	0.89 (0.89, 0.90)
Extremely preterm (22-27 wks)	2,279	62.5	30.2	0.40 (0.38, 0.43)	40.4	0.48 (0.46, 0.51)
Very preterm (28-33 wks)	12,396	94.0	58.8	0.79 (0.78, 0.80)	69.9	0.84 (0.83, 0.85)
Late preterm (34-36 wks)	38,551	98.3	68.0	0.91 (0.91, 0.92)	77.3	0.93 (0.93, 0.94)
Early term (37-38 wks)	161,462	99.3	71.9	0.97 (0.97, 0.97)	80.8	0.98 (0.97, 0.98)
Full-term (39-41 wks)	602,016	99.6	74.2	Reference	82.7	Reference
Post-term (≥42 wks)	61,293	99.5	74.1	1.00 (0.99, 1.00)	82.9	1.00 (1.00, 1.01)
Per additional week				1.02 (1.02, 1.02)		1.02 (1.02, 1.02)

<sup>a</sup>Survival without any comorbidities in the AYA HOPE Comorbidity Index through age 18 years.

<sup>b</sup>Survival without any comorbidities in the Charlson Comorbidity Index through age 18 years.

<sup>c</sup>Adjusted for child characteristics (birth year, sex, fetal growth, multiple birth, birth order) and maternal characteristics (age, education, smoking, preeclampsia, other hypertensive disorders, diabetes).

AYA HOPE = Adolescent and Young Adult Health Outcomes and Patient Experience, CCI = Charlson Comorbidity Index, PR = prevalence ratio

**eTable 5. Prevalence of AYA HOPE Comorbidity Index Diagnoses at Ages 18-43 Years by Gestational Age at Birth**

Comorbidity	Extremely preterm (22-27 wks) n (%)	Very preterm (28-33 wks) n (%)	Late preterm (34-36 wks) n (%)	Early term (37-38 wks) n (%)	Full-term (39-41 wks) n (%)	Post-term (≥42 wks) n (%)
<b>Cardiovascular</b>						
Hypertension	208 (3.86)	2,185 (6.62)	7,716 (6.97)	29,097 (6.51)	111,104 (6.37)	16,225 (7.13)
Ischemic heart disease	2 (0.04)	20 (0.06)	109 (0.10)	328 (0.07)	1,238 (0.07)	209 (0.09)
Pericarditis	1 (0.02)	19 (0.06)	66 (0.06)	290 (0.06)	1,093 (0.06)	157 (0.07)
Other diseases of pericardium	3 (0.06)	9 (0.03)	26 (0.02)	63 (0.01)	259 (0.01)	34 (0.01)
Valve disorders	11 (0.20)	130 (0.39)	316 (0.29)	971 (0.22)	3,287 (0.19)	466 (0.20)
Arrhythmias	59 (1.09)	399 (1.21)	1,350 (1.22)	4,783 (1.07)	18,380 (1.05)	2,628 (1.15)
Congestive heart failure	40 (0.74)	137 (0.41)	261 (0.24)	714 (0.16)	2,087 (0.12)	346 (0.15)
Thromboembolic disease	6 (0.11)	45 (0.14)	115 (0.10)	401 (0.09)	1,445 (0.08)	225 (0.10)
Other peripheral vascular disease	22 (0.41)	206 (0.62)	567 (0.51)	2,470 (0.55)	9,768 (0.56)	1,331 (0.58)
<b>Endocrine</b>						
Diabetes mellitus	55 (1.02)	478 (1.45)	1,933 (1.75)	7,165 (1.60)	25,370 (1.46)	3,718 (1.63)
Thyroid disorders	103 (1.91)	1,092 (3.31)	4,093 (3.70)	15,515 (3.47)	60,815 (3.49)	9,145 (4.02)
Pituitary disorders	46 (0.85)	197 (0.60)	497 (0.45)	1,912 (0.43)	6,155 (0.35)	893 (0.39)
Lipid disorders	38 (0.70)	366 (1.11)	1,227 (1.11)	4,524 (1.01)	17,240 (0.99)	2,753 (1.21)
<b>Gastrointestinal</b>						
Cholelithiasis	20 (0.37)	198 (0.60)	659 (0.60)	2,589 (0.58)	9,948 (0.57)	1,588 (0.70)
Esophagitis	2 (0.04)	22 (0.07)	100 (0.09)	300 (0.07)	1,177 (0.07)	159 (0.07)
Ulcer disease	11 (0.20)	89 (0.27)	284 (0.26)	1,057 (0.24)	3,891 (0.22)	593 (0.26)
Gastritis/colitis	84 (1.56)	856 (2.59)	3,197 (2.89)	12,754 (2.85)	46,892 (2.69)	6,157 (2.71)
Irritable bowel disease	12 (0.22)	115 (0.35)	396 (0.36)	1,799 (0.40)	6,947 (0.40)	792 (0.35)
Pancreatitis	1 (0.02)	8 (0.02)	18 (0.02)	90 (0.02)	321 (0.02)	53 (0.02)
<b>Hematologic</b>						
Von Willebrand disease	1 (0.02)	17 (0.05)	44 (0.04)	144 (0.03)	602 (0.03)	76 (0.03)
Immune thrombocytopenic purpura	1 (0.02)	35 (0.11)	90 (0.08)	346 (0.08)	1,296 (0.07)	175 (0.08)
<b>Hepatic</b>						
Viral hepatitis	16 (0.30)	151 (0.46)	515 (0.47)	1,717 (0.38)	5,994 (0.34)	966 (0.42)
Non-alcoholic cirrhosis	0 (0.00)	13 (0.04)	44 (0.04)	136 (0.03)	430 (0.02)	60 (0.03)
Other non-alcoholic liver disease	11 (0.20)	93 (0.28)	356 (0.32)	1,124 (0.25)	4,161 (0.24)	600 (0.26)
<b>HIV/AIDS</b>	4 (0.07)	8 (0.02)	30 (0.03)	99 (0.02)	384 (0.02)	65 (0.03)

<b>Comorbidity</b>	<b>Extremely preterm (22-27 wks) n (%)</b>	<b>Very preterm (28-33 wks) n (%)</b>	<b>Late preterm (34-36 wks) n (%)</b>	<b>Early term (37-38 wks) n (%)</b>	<b>Full-term (39-41 wks) n (%)</b>	<b>Post-term (≥42 wks) n (%)</b>
<b><u>Mental health</u></b>						
Mood disorders	284 (5.27)	2,366 (7.16)	7,879 (7.12)	31,645 (7.08)	118,167 (6.78)	15,666 (6.88)
Anxiety disorders	274 (5.08)	2,365 (7.16)	7,700 (6.96)	30,640 (6.85)	111,566 (6.40)	14,242 (6.26)
Schizophrenia	12 (0.22)	104 (0.31)	253 (0.23)	958 (0.21)	3,360 (0.19)	497 (0.22)
Attention deficit disorder	245 (4.54)	1,358 (4.11)	4,012 (3.63)	15,176 (3.39)	51,791 (2.97)	6,292 (2.76)
Mental delay	248 (4.60)	887 (2.69)	1,741 (1.57)	4,855 (1.09)	12,987 (0.75)	1,861 (0.82)
<b><u>Neurological</u></b>						
Cerebrovascular disease	24 (0.45)	166 (0.50)	392 (0.35)	1,228 (0.27)	4,543 (0.26)	707 (0.31)
Chronic pain	11 (0.20)	87 (0.26)	275 (0.25)	1,118 (0.25)	4,112 (0.24)	612 (0.27)
Migraine headaches	39 (0.72)	610 (1.85)	2,311 (2.09)	9,656 (2.16)	37,868 (2.17)	4,919 (2.16)
Multiple sclerosis	3 (0.06)	39 (0.12)	186 (0.17)	719 (0.16)	3,119 (0.18)	479 (0.21)
Cerebral palsy	287 (5.32)	1,151 (3.49)	713 (0.64)	1,296 (0.29)	3,333 (0.19)	602 (0.26)
Epilepsy	183 (3.39)	897 (2.72)	2,040 (1.84)	6,656 (1.49)	22,134 (1.27)	3,138 (1.38)
Peripheral neuropathy	8 (0.15)	41 (0.12)	173 (0.16)	677 (0.15)	2,408 (0.14)	354 (0.16)
Specific developmental disorders	129 (2.39)	515 (1.56)	1,063 (0.96)	3,419 (0.76)	10,059 (0.58)	1,282 (0.56)
<b><u>Obesity</u></b>	78 (1.45)	755 (2.29)	2,930 (2.65)	11,725 (2.62)	44,473 (2.55)	6,907 (3.04)
<b><u>Renal</u></b>	68 (1.26)	652 (1.97)	2,208 (1.99)	8,707 (1.94)	31,585 (1.81)	4,057 (1.78)
<b><u>Respiratory</u></b>						
Asthma	674 (12.50)	5,362 (16.24)	16,377 (14.80)	60,319 (13.49)	217,642 (12.49)	27,519 (12.09)
COPD	107 (1.98)	264 (0.80)	465 (0.42)	1,361 (0.30)	4,150 (0.24)	477 (0.21)
<b><u>Rheumatologic/autoimmune</u></b>	24 (0.45)	251 (0.76)	920 (0.83)	3,821 (0.85)	14,728 (0.85)	2,002 (0.88)

AYA HOPE = Adolescent and Young Adult Health Outcomes and Patient Experience

**eTable 6. Prevalence of Charlson Comorbidity Index (CCI) Diagnoses at Ages 18-43 Years by Gestational Age at Birth**

Comorbidity	Extremely preterm (22-27 wks)	Very preterm (28-33 wks)	Late preterm (34-36 wks)	Early term (37-38 wks)	Full-term (39-41 wks)	Post-term (≥42 wks)
	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)
1. Myocardial infarction	1 (0.02)	13 (0.04)	60 (0.05)	173 (0.04)	660 (0.04)	112 (0.05)
2. Congestive heart failure	40 (0.74)	137 (0.41)	261 (0.24)	714 (0.16)	2,087 (0.12)	346 (0.15)
3. Peripheral vascular disease	27 (0.50)	228 (0.69)	605 (0.55)	2,589 (0.58)	10,153 (0.58)	1,385 (0.61)
4. Cerebrovascular disease	26 (0.48)	185 (0.56)	462 (0.42)	1,475 (0.33)	5,491 (0.32)	863 (0.38)
5. Dementia	2 (0.04)	6 (0.02)	26 (0.02)	57 (0.01)	217 (0.01)	31 (0.01)
6. Chronic pulmonary disease	729 (13.52)	5,593 (16.94)	16,836 (15.22)	61,621 (13.78)	221,683 (12.72)	28,058 (12.33)
7. Connective tissue disease	24 (0.45)	251 (0.76)	920 (0.83)	3,821 (0.85)	14,728 (0.85)	2,002 (0.88)
8. Ulcer disease	11 (0.20)	89 (0.27)	284 (0.26)	1,057 (0.24)	3,891 (0.22)	593 (0.26)
9. Mild liver disease	7 (0.13)	60 (0.18)	238 (0.22)	721 (0.16)	2,741 (0.16)	406 (0.18)
10. Diabetes	54 (1.00)	472 (1.43)	1,914 (1.73)	7,107 (1.59)	25,097 (1.44)	3,679 (1.62)
11. Hemiplegia	229 (4.25)	983 (2.98)	692 (0.63)	1,591 (0.36)	4,837 (0.28)	795 (0.35)
12. Moderate or severe renal disease	27 (0.50)	323 (0.98)	1,173 (1.06)	4,518 (1.01)	17,625 (1.01)	2,405 (1.06)
13. Diabetes with end-organ damage	5 (0.09)	130 (0.39)	579 (0.52)	2,085 (0.47)	7,414 (0.43)	939 (0.41)
14. Any tumor	24 (0.45)	273 (0.72)	907 (0.82)	3,509 (0.78)	14,293 (0.82)	2,148 (0.94)
15. Leukemia	3 (0.06)	47 (0.14)	160 (0.14)	630 (0.14)	2,239 (0.13)	324 (0.14)
16. Lymphoma	2 (0.04)	38 (0.12)	122 (0.11)	498 (0.11)	2,099 (0.12)	304 (0.13)
17. Moderate or severe liver disease	0 (0.00)	17 (0.05)	53 (0.05)	154 (0.03)	593 (0.03)	85 (0.04)
18. Metastatic solid tumor	5 (0.09)	47 (0.14)	181 (0.16)	660 (0.15)	2,679 (0.15)	419 (0.18)
19. AIDS	4 (0.07)	8 (0.02)	30 (0.03)	99 (0.02)	384 (0.02)	65 (0.03)

**eTable 7A. Interactions Between Gestational Age at Birth and Sex in Relation to Survival Without Any AYA HOPE Comorbidities at Ages 18-43 Years**

	Gestational age at birth						PRs for early term vs. full-term within sex strata	PRs for preterm vs. full-term within sex strata
	Full-term (39-41 wks)		Early term (37-38 wks)		Preterm (<37 wks)			
	Prev.	PR (95% CI) <sup>a</sup>	Prev.	PR (95% CI) <sup>a</sup>	Prev.	PR (95% CI) <sup>a</sup>		
<b>Sex</b>								
Male	68.2%	Reference	66.1%	0.97 (0.96, 0.97)	58.6%	0.86 (0.85, 0.86)	0.97 (0.96, 0.97)	0.86 (0.85, 0.86)
Female	57.7%	0.85 (0.84, 0.85)	55.8%	0.82 (0.81, 0.82)	49.9%	0.73 (0.72, 0.73)	0.96 (0.96, 0.97)	0.86 (0.86, 0.87)
PRs for female vs. male within gestational age strata		0.85 (0.84, 0.85)		0.84 (0.84, 0.85)		0.85 (0.84, 0.86)		
Interaction on additive scale: RERI (95% CI)			0.003 (-0.002, 0.007); <i>P</i> =0.28		0.027 (0.020, 0.035); <i>P</i> <0.001			
Interaction on multiplicative scale: Ratio of PRs (95% CI)			0.997 (0.992, 1.002); <i>P</i> =0.26		1.007 (0.997, 1.017); <i>P</i> =0.15			

<sup>a</sup>Adjusted for child characteristics (birth year, fetal growth, multiple birth, birth order) and maternal characteristics (age, education, smoking, preeclampsia, other hypertensive disorders, diabetes).

AYA HOPE = Adolescent and Young Adult Health Outcomes and Patient Experience, PR = prevalence ratio, Prev. = prevalence of survival without major comorbidities (AYA HOPE score = 0), RERI = relative excess risk due to interaction

**eTable 7B. Interactions Between Gestational Age at Birth and Sex in Relation to Survival Without Any CCI Comorbidities at Ages 18-43 Years**

	Gestational age at birth						PRs for early term vs. full-term within sex strata	PRs for preterm vs. full-term within sex strata
	Full-term (39-41 wks)		Early term (37-38 wks)		Preterm (<37 wks)			
	Prev.	PR (95% CI) <sup>a</sup>	Prev.	PR (95% CI) <sup>a</sup>	Prev.	PR (95% CI) <sup>a</sup>		
<b>Sex</b>								
Male	83.1%	Reference	81.5%	0.98 (0.98, 0.98)	73.7%	0.89 (0.88, 0.89)	0.98 (0.98, 0.98)	0.89 (0.88, 0.89)
Female	80.5%	0.97 (0.97, 0.97)	79.2%	0.95 (0.95, 0.95)	72.4%	0.87 (0.87, 0.87)	0.98 (0.98, 0.98)	0.90 (0.89, 0.90)
PRs for female vs. male within gestational age strata		0.97 (0.97, 0.97)		0.97 (0.97, 0.97)		0.98 (0.98, 0.99)		
Interaction on additive scale: RERI (95% CI)			0.003 (0.000, 0.006); <i>P</i> =0.07		0.016 (0.010, 0.021); <i>P</i> <0.001			
Interaction on multiplicative scale: Ratio of PRs (95% CI)			1.002 (0.999, 1.006); <i>P</i> =0.16		1.014 (1.008, 1.021); <i>P</i> <0.001			

<sup>a</sup>Adjusted for child characteristics (birth year, fetal growth, multiple birth, birth order) and maternal characteristics (age, education, smoking, preeclampsia, other hypertensive disorders, diabetes).

CCI = Charlson Comorbidity Index, PR = prevalence ratio, Prev. = prevalence of survival without major comorbidities (CCI score = 0), RERI = relative excess risk due to interaction

**eTable 8. Co-sibling Analyses for Association Between Gestational Age at Birth (1973-1997) and Survival Without Major Comorbidities Through 2015, Sweden**

	N	Survival and AYA HOPE=0 <sup>a</sup>		Survival and CCI=0 <sup>b</sup>	
		PR (95% CI) <sup>c</sup>	P	PR (95% CI) <sup>c</sup>	P
<b>Born in 1973-1997 (attained ages 18-43; median 29.8 yrs)</b>	2,169,233				
Preterm (<37 wks)	125,040	0.88 (0.87, 0.88)	<0.001	0.89 (0.89, 0.90)	<0.001
Early term (37-38 wks)	381,028	0.98 (0.98, 0.99)	<0.001	0.99 (0.99, 0.99)	<0.001
Full-term (39-41 wks)	1,477,782	Reference		Reference	
Post-term (≥42 wks)	185,383	1.00 (0.99, 1.00)	0.34	1.00 (1.00, 1.00)	0.31
Per additional week		1.02 (1.02, 1.02)	<0.001	1.02 (1.02, 1.02)	<0.001
<b>Born in 1973-1979 (attained ages 36-43; median 39.7 yrs)</b>	476,191				
Preterm (<37 wks)	24,818	0.82 (0.80, 0.84)	<0.001	0.83 (0.82, 0.85)	<0.001
Early term (37-38 wks)	66,183	0.98 (0.96, 0.99)	<0.001	0.98 (0.97, 0.99)	<0.001
Full-term (39-41 wks)	322,684	Reference		Reference	
Post-term (≥42 wks)	62,506	1.00 (0.99, 1.02)	0.54	1.01 (1.00, 1.02)	0.06
Per additional week		1.03 (1.03, 1.03)	<0.001	1.03 (1.03, 1.03)	<0.001
<b>Born in 1980-1989 (attained ages 26-35; median 30.7 yrs)</b>	893,679				
Preterm (<37 wks)	52,742	0.88 (0.87, 0.89)	<0.001	0.90 (0.89, 0.91)	<0.001
Early term (37-38 wks)	167,956	0.99 (0.98, 1.00)	0.02	0.99 (0.99, 0.99)	0.001
Full-term (39-41 wks)	604,648	Reference		Reference	
Post-term (≥42 wks)	68,333	0.99 (0.98, 1.00)	0.08	1.00 (0.99, 1.01)	0.88
Per additional week		1.02 (1.02, 1.02)	<0.001	1.02 (1.02, 1.02)	<0.001
<b>Born in 1990-1997 (attained ages 18-25; median 22.5 yrs)</b>	799,363				
Preterm (<37 wks)	47,480	0.87 (0.85, 0.88)	<0.001	0.88 (0.88, 0.89)	<0.001
Early term (37-38 wks)	146,889	0.98 (0.97, 0.99)	<0.001	0.98 (0.98, 0.99)	<0.001
Full-term (39-41 wks)	550,450	Reference		Reference	
Post-term (≥42 wks)	54,544	1.00 (0.99, 1.01)	0.90	1.00 (0.99, 1.01)	0.97
Per additional week		1.03 (1.02, 1.03)	<0.001	1.02 (1.02, 1.02)	<0.001

<sup>a</sup>Survival without any comorbidities in the AYA HOPE Comorbidity Index through 2015.

<sup>b</sup>Survival without any comorbidities in the Charlson Comorbidity Index through 2015.

<sup>c</sup>Adjusted for shared familial (genetic and/or environmental) factors, and additionally for specific child characteristics (birth year, sex, fetal growth, multiple birth, birth order) and maternal characteristics (age, education, smoking, preeclampsia, other hypertensive disorders, diabetes).

AYA HOPE = Adolescent and Young Adult Health Outcomes and Patient Experience, CCI = Charlson Comorbidity Index, PR = prevalence ratio