

Education Bulletin

Measuring Blood Pressure

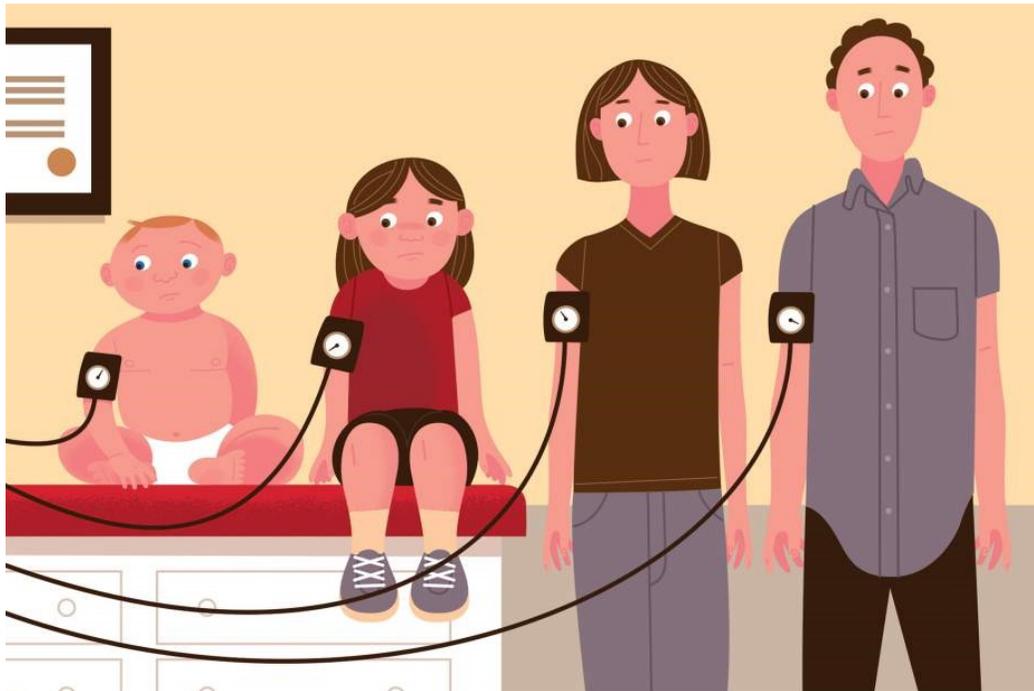


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Dear Colleagues,

The mortality and morbidity of cardio-vascular disease (CVD) are markedly increased in people with diabetes compared with those without diabetes. Hypertension has a greater impact on CVD in people with diabetes than those who do not have diabetes. Blood pressure (BP) control (<140/80 mmHg in adults, see below table for children) reduces cardio-vascular morbidity and mortality in diabetes, and also helps to protect against diabetic nephropathy.

A family history of early CVD before the age of 55 years of age, lipid disturbances,

adolescents, [ISPAD Clinical Practice Consensus Guidelines 2014](#)

The most important principle in prevention of complications is to achieve as near normal glycaemic control as possible by intensive education and treatment from diagnosis.

Blood pressure should be measured in children and young people with diabetes at least annually.

Anti-hypertensive medication should be introduced in children and young people with diabetes if BP is consistently > 95th centile (see table below) or >130/80 mmHg. The following link provides more detailed information on normal BP levels for age, sex, and height: www.nhlbi.nih.gov/health/prof/heart/hbp/hbp_ped.pdf

Angiotensin converting enzyme (ACE) inhibitors, (such as enalapril, captopril), or Angiotensin II receptor blockers (ARB) are recommended treatment and have been effective and safe in children in short-term studies, however, **are not safe during pregnancy**.

Other antihypertensive agents such as calcium channel blockers and thiazides and other diuretics can be used if ACE inhibitors are unavailable. Chapter 10, Ongoing care, management of complications, [Pocketbook for management of diabetes in childhood and adolescence in under-resourced countries, second edition 2017](#)

Blood Pressure Values Requiring Further Evaluation

Age, y	Blood Pressure, mmHg			
	Male		Female	
	Systolic	Diastolic	Systolic	Diastolic
3	100	59	100	61
4	102	62	101	64
5	104	65	103	66
6	105	68	104	68
7	106	70	106	69
8	107	71	108	71
9	109	72	110	72
10	111	73	112	73
11	113	74	114	74
12	115	74	116	75
13	117	75	117	76
14	120	75	119	77
15	120	76	120	78
16	120	78	120	78
17	120	80	120	78
18	120	80	120	80

These values represent the lower limits for abnormal blood pressure ranges, according to age and gender. Any blood pressure readings equal to or greater than these values represent blood pressures in the pre-hypertensive, stage 1 hypertensive, or stage 2 hypertensive range and should be further evaluated by a physician.

For more information contact:

Angie Middlehurst
Deputy Manager & Education
Director
angiem@diabetesnsw.com.au



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