

Female Infant Organ Weights

Age	Mean	CH	Brain	Thymus	Heart	Lungs	Liver	Spleen	Pancreas	Adrenal	Kidneys
months	SD	cm	gm	gm	gm	gm	gm	gm	gm	gm	gm
1	M	51.9	433	6.6	21	64	139	11	5.0	4.8	31
	SD	4.5	59	4.9-	5	27	31	4	1.8	1.9	8
2	M	54.0	490	5.8	26	74	159	14	7.1	4.7	36
	SD	3.7	51	4.7	6	23	31	5	2.9	1.4	10
3	M	57.0	525	9.7	28	81	183	15	8.5	4.8	42
	SD	3.7	89	6.9	4	14	39	5	3.2	1.4	12
4	M	59.0	595	9.0	30	91	204	17	9.0	4.6	50
	SD	3.7	80	7.3	6	24	49	5	3.0	2.1	11
5	M	62.2	725	13	36	102	227	19	11	4.8	52
	SD	3.3	62	5	5	22	38	5	3	2.2	13
6	M	63.0	730	10	37	111	242	18	11	4.6	58
	SD	3.0	85	6	7	30	58	8	4	1.5	20
7	M	65.4	750	10	40	111	272	22	10	5.5	65
	SD	4.2	92	8	9	38	51	8	3	2.2	14
8	M	66.5	770	8	41	109	276	20	11	5.3	60
	SD	4.5	96	5	7	35	54	9	5	2.3	13
9	M	68.3	810	9	41	105	288	18	14	5.4	62
	SD	4.7	82	5	5	28	67	6	5	1.5	10
10	M	67.5	830	12	43	105	284	25	13	5.7	66
	SD	4.2	117	7	7	21	48	11	6	1.7	10
11	M	70.5	875	15	44	125	292	23	14	6.2	68
	SD	3.1	64	8	8	31	36	9	7	2.0	14
12	M	71.5	886	11	49	115	315	27	15	6.0	72
	SD	4.7	64	8	6	34	38		8	1.4	19

M, mean; SD, standard deviation (SD are not calculated when <5 cases); It is important to remember that these thymus weights are understated, adrenal weights are overstated, and that crown heel (CH) lengths, rather than age or body weight, are the standards against which expected weights are to be determined. Schulz DM, Giordano DA, Schulz DH. Hearts of Infants and Children. Weights and Measurements. *Arch Pathol* 1962;74:244-250.

REFERENCES

General Pediatric and Forensic Pathology

- Bohm, N. (1988). *Pediatric Autopsy Pathology*, St. Louis: CV Mosby Co.
- Byard, R. W., Moore, L., Bourne, A. J. (1990). Sudden and unexpected death. *Pediatr Pathol* 10:837-841.
- Byard, R. W., and Cohle, S. D. (1994). *Sudden Death in Infancy, Childhood and Adolescence*, Cambridge University Press.
- Guntheroth, W. G. (1989). *Crib Death. The Sudden Infant Death Syndrome* (2nd revised ed.), Mount Kisco, NY: Futura Publishing Company.
- Jones, A. M., and Weston, J. T. (1996). The examination of the sudden infant death syndrome: investigative and autopsy protocols. *Forensic Sci* 1:1833-841.
- Kirschner, R., Christoffel, K. K., Kearns, M. L., and Rosman, M. (1985). Child Abuse/Neglect Autopsy Protocol. Convened by the Illinois Department of Children and Family Services and the Cook County Medical Examiner.
- Krous, H. F. (1995). The differential diagnosis of sudden, unexpected infant death. In Rognum, T. O. (ed.), *Sudden Infant Death Syndrome, New Trends in the Nineties*, Scandinavian University Press, p. 74-80.
- Lesstma, J. E. (1988). *Forensic Neuropathology*, New York: Raven Press.
- Levin, A. V., and Sheridan, M. S. (1995). *Munchausen Syndrome by Proxy, Issues in Diagnosis and Treatment*, New York: Lexington Books.
- Mason, J. K. (1989). *Pediatric Forensic Medicine and Pathology*, London: Chapman and Hall Medical.

11. Norman, M. G., Smialek, J. E., Newman D. E., and Horembala, E. J. (1984). The post mortem examination on the abused child, pathological, radiographic and legal aspects. *Perspect Pediatr Pathol* 8:313-343.
12. Rognum, T. O. (1996). *Sudden Infant Death Syndrome. New Trends in the Nineties*, Oslo: Scandinavian, University Press.
13. Smialek, J. E., and Lambros, Z. (1988). Investigation of sudden infant death. *Pediatrics* 15:191-197.
14. Valdes-Dapena, M., and Huff, D. (1994). *Perinatal Autopsy Manual*, Washington, D.C.: Armed Forces Institute of Pathology Fascicle.

Weights, Measurements, and Dissection Techniques

1. Bohm, N. (1988). *Pediatric Autopsy Pathology*, St. Louis: CV Mosby Co.
2. Devine, W. A., Debich D. and Anderson, R. H. (1991). Dissection of congenitally malformed hearts, with comments on the value of sequential segmental analysis. *Pediatr Pathol* 11:235-259.
3. Guo, S., and Moore, W. M. (1989). Weight and recumbent length from 1 to 12 mo of age: Reference data for 1-mo increments. *Am J Clin Nutr* 49:599-607.
4. Jones, A. M., and Weston, J. T. (1976). The examination of the sudden infant death syndrome infant: Investigative and autopsy protocols. *Forensic Sci* 1:833-841.
5. Schulz, D. B., Giordano, D. A., and Schultz, D. M. (1962). Weights of organs of fetuses and infants. *Arch Pathol* 74:244.
6. Schulz, D. M., and Giordano, D. A. (1962). Hearts of infants and children. *Arch Pathol* 74:464-471.
7. Valdes-Dapena, M., and Huff, D. (1994). *Perinatal Autopsy Manual*, Washington, D.C.: 1994 Armed Forces Institute of Pathology Fascicle.

Duration of Illness and Age of Injuries

1. Emery, J. L. (1964). The assessment of the duration of illness in children unexpectedly dead. *Med Sci Law* 4:39.
2. Van Baarlen, J., Schuurman, H. J., and Huber, J. (1988). Acute thymus involution in infancy and childhood: A reliable marker for duration of acute illness. *Hum Pathol* 19:1155-1160.
3. Wilson, E. F. (1977). Estimation of the age of cutaneous contusions in child abuse. *Pediatrics* 60:750.

SIDS

1. Beal, S., Need, M., and Byard, R. W. (1994). Which infants are no longer dying because of avoidance of prone sleeping? *Med J Aust* 160:660.
2. Beal, S. (1991). Sudden infant death syndrome related to sleeping position and bedding. *Med J Aust* 155:507-508.
3. Beal, S. M., and Byard, R. W. (1995). Accidental death or sudden infant death syndrome? *J Paediatr Child Health* 31:269-271; Beckwith, J. B. (1973). The sudden infant death syndrome. *Curr Probl Ped* 3:1-37.
4. Beckwith, J. B. (1970). Discussion of terminology and definition of the sudden infant death syndrome. In Bergman, A. B., Beckwith, J. B., and Ray, C. G. (eds) *Proceedings of the Second International Conference on Causes of Sudden Death in Infants*, Seattle: University of Washington Press, pp. 14-22.
5. Beckwith, J. B. (1988). Intrathoracic petechial hemorrhages: A clue to the mechanism of death in sudden infant death syndrome. *Ann NY Acad Sci* 533:37-47.
6. Beckwith, J. B. (1973). The sudden infant death syndrome. *Curr Probl Ped* 3:1-37.
7. Berry, P. J. (1992). Pathological findings in SIDS. *J Clin Pathol* 45(Suppl):11-16.
8. Byard, R. W., and Beal, S. M. (1995). *J Paediatr Child* Has changing diagnostic preference been responsible for the recent fall in incidence of sudden infant death syndrome in south Australia? *J Paediatr Child Health* 31:197-199.
9. Byard, R. W., and Burnell, R. H. (1995). Apparent life threatening events and infant holding practices. *Arch Dis Child* 73:502-504.
10. Byard, R. W., and Krous, H. F. (1995). Minor inflammatory lesions and sudden infant death: Cause, coincidence, or epiphenomena? *Pediatr Pathol Lab Med* 15:649-654.
11. Culbertson, J. L., Krous, H. E., and Bendell, D. (1988). *Sudden Infant Death Syndrome: Medical Aspects and Psychological Management*, Baltimore: Johns Hopkins University Press.
12. Czegledy-Nagy, E. N. Cutz, E., and Becker, L. E. (1993). Sudden death in infants under one year of age. *Pediatr Pathol* 13:671-684.

Male Fetus and Newborn Organ Weights

GA	Mean	Body	CH	Brain	Thymus	Heart	Lungs	Liver	Spleen	Pancreas	Adrenal	Kidneys
months	SD	gm	cm	gm	gm	gm	gm	gm	gm	gm	gm	gm
5	M	312	22.7	45	0.9	4.6	7.3	18	1.7	2.1	2.5	4.2
	SD	—	—	—	—	—	—	6	1.5	—	—	2.7
6	M	729	30.6	112	2.1	6.2	18	32	2.5	2.1	3.2	8.0
	SD	176	2.1	36	1.4	2.9	6	27	1.9	1.9	2.4	4.5
7	M	1,145	36.2	169	4.3	9.8	29	47	3.8	2.6	4.1	13
	SD	225	3.0	46	2.0	4.8	12	12	2.3	1.0	1.7	4
8	M	1,778	40.6	283	7.3	14	39	64	5.4	3.2	4.9	17
	SD	337	3.0	52	5.1	4	14	18	2.4	1.9	2.1	5
9	M	2,420	45.0	354	8.5	18	47	89	8.6	3.5	6.2	22
	SD	666	2.4	70	6.7	4	17	33	4.0	2.8	2.8	7
10*	M	3,277	49.4	409	12	23	59	130	12	5.2	8.5	30
	SD	653	4.5	60	5	6	21	39	4	2.7	3.5	9
10**	M	3,171	49.3	406	8.6	23	66	129	10	5.3	7.0	29
	SD	488	2.8	55	5.5	5	25	33	3	3.2	2.8	8

*Stillborn; **liveborn to 1 week. Schulz DM, Giordano DA, Schulz DH. Hearts of Infants and Children. Weights and Measurements. *Arch Pathol* 1962;74:244-250.

Male Infant Organ Weights

Age	Mean	CH	Brain	Thymus	Heart	Lungs	Liver	Spleen	Pancreas	Adrenal	Kidneys
months	SD	cm	gm	gm	gm	gm	gm	gm	gm	gm	gm
1	M	51.4	460	7.8	23	64	140	12	6.2	5.1	34
	SD	3.2	47	5.3	7	21	40	4	3.6	1.7	9
2	M	54.0	506	9.4	27	74	160	15	7.2	5.0	39
	SD	2.9	67	4.4	7	26	46	5	4.4	1.6	9
3	M	57.7	567	10	30	89	179	16	7.7	5.0	45
	SD	2.9	81	5	7	23	41	5	3.1	1.3	10
4	M	60.4	620	10	31	96	195	17	11	4.9	47
	SD	4.1	71	6	7	27	41	5	2.0	12	54
5	M	62.0	746	12	35	93	228	18	11	5.3	54
	SD	3.1	91	7	5	18	47	7	4	1.9	11
6	M	64.2	762	10	40	115	259	20	11	5.2	62
	SD	3.9	73	6	8	31	58	7	5	2.0	14
7	M	66.7	767	12	43	118	276	23	12	5.5	69
	SD	5.0	32	9	8	33	54	10	6	2.1	14
8	M	68.2	774	10	44	104	285	20	13	5.4	66
	SD	3.4	95	6	8	32	57	7	7	2.3	14
9	M	69.4	820	10	45	109	288	22	16	5.4	67
	SD	4.2	49	4	7	33	47	5	7	2.0	16
10	M	69.7	850	9	46	110	300	24	14	5.7	72
	SD	3.9	96	5	6	34	69	11	6	2.1	17
11	M	70.5	875	19	48	130	305	28	16	6.1	76
	SD	4.3	89	4	7	31	81	10	3	1.8	19
12	M	73.8	954	12	50	116	325	28	14	6.3	76
	SD	4.1	35	5	6	23	39	7	6	2.2	13

M, mean; SD, standard deviation (SD are not calculated <5 cases); It is important to remember that these thymus weights are understated, adrenal weights are overstated, and that crown heel (CH) lengths, rather than age or body weight, are the standards against which expected weights are to be determined. Schulz DM, Giordano DA, Schulz DH. Hearts of Infants and Children. Weights and Measurements. *Arch Pathol* 1962;74:244-250.

Female Fetus and Newborn Organ Weights

Age	Mean	Body	CH	Brain	Thymus	Heart	Lungs	Liver	Spleen	Pancreas	Adrenal	Kidneys
months	SD	gm	cm	gm	gm	gm	gm	gm	gm	gm	gm	gm
5	M	330	23.5	50	1.5	4.9	5.2	18	1.4	1.4	2.2	3.9
6	M	767	31.9	113	2.8	6.5	17	41	3.1	2.2	3.8	9.1
	SD	152	1.8	36	1.5	2.3	6	25	1.8	1.8	2.3	4.2
7	M	1,110	35.4	160	5.0	9.2	25	49	3.9	2.5	3.9	13
	SD	245	2.6	52	2.8	2.9	8	18	2.3	2.1	2.1	5
8	M	1,718	40.7	244	5.7	13	38	62	5.4	3.1	4.8	17
	SD	415	2.4	51	4.2	3	12	21	3.1	2.9	2.2	6
9	M	2,476	45.2	327	6.2	16	51	96	8.6	3.6	6.9	22
	SD	569	1.0	69	4.3	5	19	38	3.7	1.9	3.0	6
10*	M	3,172	49.6	394	10	21	52	129	10	5.0	8.0	28
	SD	617	3.3	81	5	5	13	44	4	3.1	3.2	9
10**	M	3,085	49.7	401	7.2	21	65	131	11	5.6	6.9	29
	SD	491	3.7	41	3.6	5	17	43	4	2.8	3.1	7

M, mean; SD, standard deviation (SD not calculated when <5 cases); *stillborn; **liveborn to 1 week. Schulz DM, Giordano DA, Schulz DH. Hearts of Infants and Children. Weights and Measurements. *Arch Pathol* 1962;74:244-250.

Male Fetus and Newborn Heart Weights and Measurements

GA	Mean	Body	CH	Heart	LV	TV	RV	PV	MV	AV
months	SD	gm	cm	gm	mm	mm	mm	mm	mm	mm
5	M	312	22.7	4.6	2.0	13	2.0	8	12	9
6	M	729	30.6	6.2	2.8	23	2.0	12	20	10
	SD			2.9	0.8	4	0.7	4	4	1
7	M	1,145	36.2	9.8	3.5	24	2.6	14	22	13
	SD			4.8	1.0	5	0.8	2	6	2
8	M	1,778	40.6	14	3.9	31	2.8	18	26	16
	SD			4	1.5	6	1.3	3	6	3
9	M	2,420	45.0	18	4.2	34	3.0	20	29	18
	SD			4	1.5	5	1.1	3	5	3
10*	M	3,277	49.4	23	4.6	38	3.4	22	33	20
	SD			6	1.5	6	1.4	4	7	2
10**	M	3,171	49.3	23	4.6	38	3.2	22	32	20
	SD			5	1.1	5	1.0	4	5	3

M, mean; SD, standard deviation (SD are not calculated when cases number <5); *stillborn; **liveborn to 1 week. Schulz DM, Giordano DA, Schulz DH. Hearts of Infants and Children. Weights and Measurements. *Arch Pathol* 1962;74:244-250.

Male Infant Heart Weights and Measurements

Age	Mean	CH	Heart	LV	RV	TV	PV	MV	AV
months	SD	cm	gm	mm	mm	mm	mm	mm	mm
1	M	51.4	23	5.9	2.6	38	23	33	21
	SD		7	1.5	0.7	5	4	4	3
2	M	54.0	27	6.0	2.9	42	25	34	23
	SD		7	1.5	1.0	6	4	5	3
3	M	57.7	30	6.4	2.5	44	27	36	26
	SD		7	1.7	1.0	5	4	5	4
4	M	60.4	31	6.5	2.3	47	27	38	26
	SD		7	1.3	0.7	5	4	4	4
5	M	62.0	35	6.8	2.6	48	29	41	27
	SD		5	1.9	0.8	5	4	5	4
6	M	64.2	40	7.4	2.6	50	31	42	28
	SD		8	1.7	0.9	6	5	4	3
7	M	66.7	43	7.6	2.8	50	31	42	29
	SD		8	1.9	1.1	6	5	4	4
8	M	68.2	44	7.6	2.7	52	32	44	32
	SD		8	1.8	1.0	8	4	6	3
9	M	69.4	45	7.4	2.4	54	32	45	30
	SD		7	1.6	0.6	7	4	4	3
10	M	69.7	46	7.5	2.6	54	34	45	33
	SD		6	1.5	0.7	6	5	4	4
11	M	70.5	48	7.3	2.5	55	33	46	32
	SD		7	1.4	0.4	4	3	3	3
12	M	73.8	50	7.9	2.8	55	35	47	33
	SD		6	1.6	0.8	4	4	3	2

M, mean; SD, standard deviation (SD are not calculated when cases number <5): It is important to remember that crown heel (CH) lengths, rather than age or body weight, are the standards against which expected measurements are to be determined. Schulz DM, Giordano DA, Schulz DH. Hearts of Infants and Children. Weights and Measurements. *Arch Pathol* 1962;74:244-250

Female Fetus and Newborn Heart Weights and Measurements

GA	Mean	Body	CH	Heart	LV	RV	TV	PV	MV	AV
months	SD	gm	cm	wt, gm	mm	mm	mm	mm	mm	mm
5	M	330	23.5	4.9	2.0	2.0	12	5	10	8
6	M	767	31.9	6.5	2.5	2.2	21	11	18	10
	SD			2.3	1.0	0.6	6	4	4	4
7	M	1,110	35.4	9.2	3.0	2.3	23	13	21	12
	SD			2.9	1.3	0.9	7	3	5	3
8	M	1,718	40.7	13	3.6	2.4	28	15	24	15
	SD			3	1.1	1.1	6	4	5	3
9	M	2,476	45.2	16	4.2	3.0	33	18	29	18
	SD			5	1.5	1.2	6	3	5	4
10*	M	3,172	49.6	21	4.4	3.4	37	21	31	19
	SD			5	1.4	1.4	7	4	6	3
10**	M	3,085	49.7	21	4.5	3.2	38	22	32	20
	SD			5	1.3	1.0			5	3

M, mean; SD, standard deviation (SD are not calculated when cases number <5); *stillborn; **liveborn to 1 week. Schulz DM, Giordano DA, Schulz DH. Hearts of Infants and Children. Weights and Measurements. *Arch Pathol* 1962;74:244-250.

Female Infant Heart Weights and Measurements

Age	Mean	CH	Heart	LV	RV	TV	PV	MV	AV
months	SD	cm	gm	mm	mm	mm	mm	mm	mm
1	M	51.9	21	5.3	2.7	38	23	31	21
	SD		5	1.0	0.7	5	4	4	3
2	M	54.0	26	6.3	2.8	40	25	34	22
	SD		6	1.5	0.8	5	3	5	3
3	M	57.0	28	6.0	2.6	42	26	36	25
	SD		4	1.2	1.1	5	3	4	3
4	M	59.0	30	6.6	2.5	45	28	38	26
	SD		6	1.1	0.8	5	3	5	4
5	M	62.2	36	7.0	2.6	49	28	39	28
	SD		5	1.6	0.8	6	3	4	4
6	M	63.0	37	7.1	2.5	48	29	40	28
	SD		7	1.3	0.7	5	4	4	3
7	M	65.4	40	7.1	2.7	50	28	40	28
	SD		9	1.7	1.1	7	5	4	4
8	M	66.5	41	7.2	2.5	50	29	41	29
	SD		7	1.4	0.7	5	4	7	4
9	M	68.3	41	7.0	2.6	51	30	42	30
	SD		5	1.2	0.7	6	5	5	4
10	M	67.5	43	7.2	2.5	53	31	45	30
	SD		7	2.4	0.7	3	3	5	3
11	M	70.5	44	7.4	2.6	53	32	46	32
	SD		8	1.4	0.7	5	3	3	4
12	M	71.5	49	7.8	2.7	54	32	46	33
	SD		6	2.4	0.5	4	4	4	5

M, mean; SD, standard deviation (SD are not calculated when <5 cases); It is important to remember that crown heel (CH) lengths, rather than age or body weight, are the standards against which expected measurements are to be determined. Schulz DM, Giordano DA, Schulz DH. Hearts of Infants and Children. Weights and Measurements. *Arch Pathol* 1962;74:244-250.