

Measured at the level of the chordae at peak downward septal motion if septal motion is normal; or measured at the peak upward motion of the left ventricular wall if septal motion is abnormal

3. SEPTAL DIASTOLIC THICKNESS (VSd):

Measured from the top of the right side of the septum to the bottom of the left side of the septum at the beginning of the QRS complex

4. SEPTAL SYSTOLIC THICKNESS (VSs):

Measured from the top of the right side of the septum to the bottom of the left side of the septum at the same point the LV systolic dimension was measured

5. LEFT VENTRICULAR WALL DIASTOLIC THICKNESS (LVWd):

Measured at end-diastole from the top of the ventricular wall to the top of the pericardium

6. LEFT VENTRICULAR WALL SYSTOLIC THICKNESS (LVWs):

Measured at end-systole from the top of the ventricular wall to the top of the pericardium at the same point systolic chamber size was measured

CALCULATIONS FOR LEFT VENTRICULAR FUNCTION

1. LEFT VENTRICULAR FRACTIONAL SHORTENING (%FS):

$$((LVd - LVs) / LVd) \times 100$$

M-MODE REFERENCE VALUES IN

NONANESTHETIZED CATS

Parameter	Jacobs ^a Range	Pipers ^b Range	Sisson ^c Range	Moise ^d $\bar{x} \pm SD$
RVd (cm)	0.00-0.70	—	0.0-0.83	—
RVs (cm)	0.27-0.94	—	—	—
RVWs (cm)	0.23-0.43	—	—	—
LVd (cm)	1.20-1.98	1.12-2.18	1.08-2.14	1.51 ± 0.21
LVs (cm)	0.52-1.08	0.64-1.68	0.40-1.12	0.69 ± 0.22
% FS	39.0-61.0	23-56	40.0-66.7	55 ± 10.2
LVET (sec)	0.10-0.18	0.11-0.19	—	—
Vcf (cm/sec)	2.35-4.95	1.27-4.55	—	—
VSd (cm)	0.22-0.40	0.28-0.60	0.30-0.60	0.50 ± 0.07
VSs (cm)	0.47-0.70	—	0.40-0.90	0.76 ± 0.12
VS% Δ	—	—	—	33.5 ± 8.2
LVWd (cm)	0.22-0.44	0.32-0.56	0.25-0.60	0.46 ± 0.05
LVWs (cm)	0.54-0.81	—	0.43-0.98	0.78 ± 0.10
LVW% Δ	—	—	—	39.5 ± 7.6
AO (cm)	0.72-1.19	0.40-1.18	0.60-1.21	0.95 ± 0.15
LA (cm)	0.93-1.51	0.45-1.12	0.70-1.70	1.21 ± 0.18
LA/AO	0.95-1.65	—	0.88-1.79	1.29 ± 0.23
EPSS (cm)	0.00-0.21	—	0.00-0.20	0.04 ± 0.07
HR	147-242	120-240	120-240	182 ± 22
Kg	1.96-6.26	2.3-6.8	2.7-8.2	4.3 ± 0.5
N	30	25	20	—

$$((LVd - LVs) / (LVET \times LVd))$$

Dimensions in this equation must be in centimeters and ejection time must be in seconds

3. LEFT VENTRICULAR WALL SYSTOLIC THICKENING (LVW % Δ):

$$((LVWs - LVWd) / LVWd) \times 100$$

4. SEPTAL SYSTOLIC THICKENING (VS % Δ):

$$((VSs - VSd) / VSd) \times 100$$

M-MODE REFERENCE VALUES IN ANESTHETIZED OR SEDATED CATS

Parameter	Allen ^a $\bar{x} \pm SD$	Fox ^b Range	Allen ^c $\bar{x} \pm SD$
RVd (cm)	—	0.12-0.75	—
RVs (cm)	—	—	—
LVd (cm)	1.30 ± 0.12	1.07-1.73	1.29 ± 0.09
LVs (cm)	0.86 ± 0.16	0.49-1.16	0.88 ± 0.08
%FS	34.5 ± 2.51	30.0-60.0	31.1 ± 4.67
LVET (sec)	0.17 ± 0.02	0.100-0.132	0.16 ± 0.02
PEP (sec)	—	0.024-0.058	—
PEP/LVET	—	0.228-0.513	—
Vcf (cm/sec)	2.05 ± 0.48	2.44-5.00	2.02 ± 0.45
VSd (cm)	0.40 ± 0.03	0.22-0.49	—
VSs (cm)	—	—	—
LVWd (cm)	0.40 ± 0.4	0.21-0.45	—
LVWs (cm)	—	—	—
VS/LVW	—	0.69-1.42	—
AO (cm)	0.90 ± 0.07	0.71-1.15	—
LA (cm)	1.00 ± 0.07	0.72-1.33	—
LA/AO	—	0.73-1.64	—
EPSS (cm)	—	—	—
HR	175 ± 20	160-300	163 ± 13
Kg	3.64 ± 0.66	2.05-6.80	3.50 ± 0.41
N	10	30	8
Drug	Sodium pentobarbital	Ketamine hydrochloride	Xylazine-sodium pentobarbital

^aAllen, DG. Echocardiographic study of the anesthetized cat. Can J Comp Med 1982;46:115-122.

^bFox PR, Bond BR, Peterson ME. Echocardiographic reference values in healthy cats sedated with ketamine hydrochloride. Am J Vet Res 1985;46:1479-1484.

^cAllen, DG, Downey RS. Echocardiographic assessment of cats anesthetized with xylazine-sodium pentobarbital. Can J Comp Med 1983;47:281-283.