

Maximum Allowable Blood Draw Volumes

The established guidelines below aid in determining the risk category of the study.

- **Healthy:** having no or minimal blood draws for clinical purposes
- **Affected:** having large amounts of blood drawn for clinical purposes
 - o For these subjects, the allowable limit is decreased because it may affect the number of blood transfusions needed.

Maximum Allowable Total Blood Draw Volumes Chart

| Body Wt. (kg) | Body Wt. (lbs) | Total blood volume (ml) | Maximum allowable volume (ml) to be collected for both clinical care and research procedures. | | | |
|---------------|----------------|-------------------------|--|--------------------------|-------------------------------|--------------------------------|
| | | | in a 24 hour period... | | in a 30-day period... | |
| | | | Affected | Healthy | Affected | Healthy |
| | | | 2.5% of total blood volume | 3% of total blood volume | 5% of total blood volume (ml) | 10% of total blood volume (ml) |
| 1 | 2.2 | 100 | 2.5 | 3 | 5 | 10 |
| 2 | 4.4 | 200 | 5 | 6 | 10 | 20 |
| 3 | 6.6 | 240 | 6 | 7.2 | 12 | 24 |
| 4 | 8.8 | 320 | 8 | 9.6 | 16 | 32 |
| 5 | 11 | 400 | 10 | 12 | 20 | 40 |
| 6 | 13.2 | 480 | 12 | 14.4 | 24 | 48 |
| 7 | 15.4 | 560 | 14 | 16.8 | 28 | 56 |
| 8 | 17.6 | 640 | 16 | 19.2 | 32 | 64 |
| 9 | 19.8 | 720 | 18 | 21.6 | 36 | 72 |
| 10 | 22 | 800 | 20 | 24 | 40 | 80 |
| 11 – 15 | 24-33 | 880-1200 | 22-30 | 26.4-36 | 44-60 | 88-120 |
| 16 – 20 | 35-44 | 1280-1600 | 32-40 | 38.4-48 | 64-80 | 128-160 |
| 21 – 25 | 46-55 | 1680-2000 | 42-50 | 50.4-60 | 64-100 | 168-200 |
| 26-30 | 57-66 | 2080-2400 | 52-60 | 62.4-72 | 104-120 | 208-240 |
| 31-35 | 68-77 | 2480-2800 | 62-70 | 74.4-84 | 124-140 | 248-280 |
| 36-40 | 79-88 | 2880-3200 | 72-80 | 86.4-96 | 144-160 | 288-320 |
| 41-45 | 90-99 | 3280-3600 | 82-90 | 98.4-108 | 164-180 | 328-360 |
| 46-50 | 101-110 | 3680-4000 | 92-100 | 110.4-120 | 184-200 | 368-400 |
| 51-55 | 112-121 | 4080-4400 | 102-110 | 122.4-132 | 204-220 | 408-440 |
| 56-60 | 123-132 | 4480-4800 | 112-120 | 134.4-144 | 224-240 | 448-480 |
| 61-65 | 134-143 | 4880-5200 | 122-130 | 146.4-156 | 244-260 | 488-520 |
| 66-70 | 145-154 | 5280-5600 | 132-140 | 158.4-168 | 264-280 | 528-560 |
| 71-75 | 156-165 | 5680-6000 | 142-150 | 170.4-180 | 284-300 | 568-600 |

| | | | | | | |
|--------|---------|-----------|---------|-----------|---------|---------|
| 76-80 | 167-176 | 6080-6400 | 152-160 | 182.4-192 | 304-360 | 608-640 |
| 81-85 | 178-187 | 6480-6800 | 162-170 | 194.4-204 | 324-340 | 648-680 |
| 86-90 | 189-198 | 6880-7200 | 172-180 | 206.4-216 | 344-360 | 688-720 |
| 91-95 | 200-209 | 7280-7600 | 182-190 | 218.4-228 | 364-380 | 728-760 |
| 96-100 | 211-220 | 7680-8000 | 192-200 | 230.4-240 | 384-400 | 768-800 |

Minimum Hgb required at time of blood draw

- Given no respiratory/CV compromise = 7.0
- If subject has respiratory/CV compromise = 9.0-10

Notes:

- Amounts in excess of the limits should be evaluated on a case-by-case basis. If the study protocol requires that the volume of blood exceeds the max limit criteria, investigators must provide detailed rationale and describe what safeguards are in place to protect subjects from undue risk.
- This is based on blood volume estimates for various age ranges:

| Age | Total Blood Volume Range* (ml/kg) |
|--------------------------|-----------------------------------|
| Preterm infant | 90 - 105 |
| Term infant | 80 - 85 |
| 1-12 months | 75 - 80 |
| 1 - 3 years | 70 - 80 |
| Older children and teens | 65 - 80 |