

Head Phantom with Cadaver Bones



PROFESSIONAL TRAINING AID WITH CADAVER BONE CONSTRUCTION FOR RADIOLOGICAL TECHNOLOGISTS

Train with confidence using RSD's Head Phantom with Cadaver Bones, purpose-built to deliver realistic, clinically relevant practice for radiological technologists at every level. Combining the acclaimed anatomy and radiological fidelity of RSD's Take-Apart Pixy, this phantom represents an average adult male – 5'9" (175 cm), 162 lbs (74 kg) – giving learners a true-to-life training experience. Built for flexibility. Designed for real-world training.

Choose the configuration that fits your program's needs:

- Opaque or transparent construction
- With or without cervical spine
- Multiple skin tones for inclusive, representative training

Applications

- Teaching & training
- Image quality
- Panographic Imaging
- Dosimetry verification
- Protocol verification

Modalities

- CT
- X-Ray
- Fluoroscopy
- Dental X-Ray
- CBCT

Model Numbers

RS-108CB: Head Phantom with Cadaver Bones and Cervical Spine, Opaque

RS-108TCB: Head Phantom with Cadaver Bones and Cervical Spine, Transparent

RS-109CB: Head Phantom with Cadaver Bones, Opaque

RS-109TCB: Head Phantom with Cadaver Bones, Transparent

The Head Phantom with Cadaver Bones is rugged, shatter-proof, and easy to transport, so it holds up in busy lab environments and travels wherever your training takes you. *A step beyond geometric phantoms.*

RSD Body Sections aren't a replacement for simple geometric phantoms used to evaluate individual imaging system characteristics. They go further, providing comprehensive, realistic assessment of both imaging systems and imaging techniques under true-to-life conditions. *Because great radiological technologists train on the real thing.*

RSD SOFT TISSUE

Energy (MeV)	Mean (HU)	Calculated (μ)	μ (ICRU 44)	% Difference	Ratio
00.08	60.30	0.1948	0.1932	0.80%	0.9921
00.10	52.88	0.1797	0.1795	0.15%	0.9985
00.12	57.10	0.1717	0.1709	0.44%	0.9956
00.14	52.95	0.1623	0.1624	0.07%	1.0007
00.20	--	0.1477	0.1439	2.61%	0.9746
00.30	--	0.1245	0.1246	0.04%	1.0004
00.60	--	0.0950	0.0941	1.01%	0.9900
00.80	--	0.0825	0.0826	0.13%	1.0013
01.00	--	0.0744	0.0743	0.18%	0.9982
02.00	--	0.0520	0.0519	0.18%	0.9982
03.00	--	0.0351	0.0357	1.71%	1.0174
06.00	--	0.0288	0.0291	0.88%	1.0088
08.00	--	0.0252	0.0255	0.98%	1.0099
10.00	--	0.0229	0.0232	1.49%	1.0151
15.00	--	0.0203	0.0203	0.15%	0.9985
20.00	--	0.0189	0.0189	0.17%	1.0017

RSD CORTICAL TISSUE

Energy (MeV)	Mean (HU)	Calculated (μ)	μ (ICRU 44)	% Difference	Ratio
00.08	1365	0.4345	0.4280	1.51%	0.9851
00.10	1048	0.3496	0.3562	1.84%	1.0188
00.12	0977	0.3211	0.3274	1.91%	1.0195
00.14	0902	0.2932	0.2986	1.80%	1.0184
00.20	--	0.2511	0.2513	0.09%	1.0009
00.30	--	0.2155	0.2137	0.84%	0.9916
00.60	--	0.1596	0.1598	0.11%	1.0011
00.80	--	0.1403	0.1402	0.10%	0.9990
01.00	--	0.1274	0.1261	1.06%	0.9895
02.00	--	0.0883	0.0885	0.17%	1.0017
03.00	--	0.0611	0.0625	2.29%	1.0235
06.00	--	0.0512	0.0525	2.46%	1.0253
08.00	--	0.0468	0.0474	1.20%	1.0121
10.00	--	0.0446	0.0444	0.39%	0.9962
15.00	--	0.0410	0.0409	0.16%	0.9984
20.00	--	0.0393	0.0397	1.02%	1.0103

RSD TRABECULAR TISSUE (SPONGIOSA)

Energy (MeV)	Mean (HU)	Calculated (μ)	μ (ICRU 44)	% Difference	Ratio
00.08	551	0.2849	--	--	--
00.10	515	0.2586	--	--	--
00.12	439	0.2337	--	--	--
00.14	318	0.1541	--	--	--

Soft Tissues: There are unlimited small variations in density and absorption throughout the human body. Phantom soft tissue is closely controlled to have an average density similar to that of these tissues.

Skeletons: RSD skeletons are highly detailed polymer moldings which reproduce the shape, mass density, and attenuation coefficients of cortical bone and spongiosa. RSD's proprietary moldings allow for continuous production, eliminate the restrictions of human skeletal bones (including limited availability, unethical collection of human bone specimens, variable size, and uncertain chemical composition), and avoid the loss of marrow in dried natural skeletons, thereby making RSD skeletons superior to "real bone."

Molds: Molds for RSD cortical bone and spongiosa were made from human skeletons consistent with the sizes of the soft tissue molds.

ICRU 44: RSD skeletons conform closely to the standards established by the International Commission on Radiation Units and Measurements (ICRU Report 44); the mass density is reduced slightly to account for a small decrease in calcium content in older patients.

LINEAR ATTENUATION DATA

- Monte Carlo simulation was used to calculate linear attenuation coefficients as a function of the beam.
- Monte Carlo results were validated with linear attenuation coefficients derived from Hounsfield Unit measurements at discrete energy levels.
- RSD phantom material linear attenuation data were compared to NIST data using ICRU Report 44 compositions of human tissues.
- NIST data was interpolated when necessary.

Materials	Density (g/cc)
RSD Soft Tissue (Opaque)	1.08
RSD Soft Tissue (Transparent)	1.10
RSD Cortical Bone	1.83
RSD Trabecular Bone	1.17