

Surface Area Body Calculator

BMI values under 20 and over 25 have been associated with higher all-cause mortality, with the risk increasing with distance from the 20–25 interval. 403f1e551a PSA is a commonly used medicinal chemistry metric for the optimization of a drug's ability to permeate cells. Molecules with a polar surface area of greater than 140 angstroms squared ($\text{\AA}^2$) tend to be poor at permeating cell membranes. For molecules to penetrate the blood-brain barrier (and thus act on receptors in the central nervous system), a PSA less than 90 $\text{\AA}^2$ is usually needed. 403f1e551a TPSA is a valuable tool in drug discovery and development. By analyzing a drug candidate's TPSA, scientists can predict its potential for oral bioavailability and ability to reach target sites within the body. This prediction hinges on a drug's ability to permeate biological barriers. 403f1e551a The BMI is a convenient rule of thumb used to broadly categorize a person based on tissue mass (muscle, fat, and bone) and height. Major adult BMI classifications are: underweight (under 18.5), normal weight (18.5 to 24.9), overweight (25 to 29.9), and obese (30 or more). When used to predict an individual's health, rather than as a statistical measurement for groups, the BMI has limitations that can make it less useful than some of the alternatives, especially when applied to individuals with abdominal obesity, short stature, or high muscle mass. 403f1e551a == Uses == 403f1e551a In most circumstances, atmospheric pressure is closely approximated by the hydrostatic pressure caused by the weight of air above the measurement point. As elevation increases, there is less overlying atmospheric mass, so atmospheric pressure decreases with increasing elevation. Because the atmosphere is thin relative to the Earth's radius – especially the dense atmospheric layer at low altitudes – the Earth's gravitational acceleration as a function of altitude can be approximated as constant and contributes little to this fall-off. Pressure measures force per unit area, with SI units of pascals (1 pascal = 1 newton per square meter, 1 N/m²). On average, a column of... 403f1e551a

Polar surface area doi:10. 2013. 1504/IJCBDD. PMID 23428480. (1-2): 146-56. 052195. Interactive Polar Surface Area calculator Free, Programmable TPSA Calculator v t e v t e The polar surface area (PSA) or topological polar surface area (TPSA) of a molecule is defined as the surface sum over all polar atoms or molecules, primarily oxygen and nitrogen, also including their attached hydrogen atoms 403f1e551a

Accessible surface area Measurement of ASA is usually described in units of square angstroms (a standard unit of measurement in molecular biology). ASA is typically calculated using the 'rolling ball' algorithm developed by Shrake & Rupley in 1973. ASA was first described by Lee & Richards in 1971 and is sometimes called the Lee-Richards molecular surface. This algorithm uses a sphere (of solvent) of a particular radius to 'probe' the surface of the molecule. Measurement The accessible surface area (ASA) or solvent-accessible surface area (SASA) is the surface area of a biomolecule that is accessible to a solvent. The accessible surface area (ASA) or solvent-accessible surface area (SASA) is the surface area of a biomolecule that is accessible to a solvent 403f1e551a

Permeating these barriers, such as the Blood-Brain Barrier (BBB), the Placental Barrier (PB), and the Blood-Mammary Barrier (BM), is crucial for many drugs to reach their intended targets. 403f1e551a The equations ignore air resistance, which has a dramatic effect on objects falling an appreciable distance in air, causing them to quickly approach a terminal velocity. The effect of air resistance varies enormously depending on the size and geometry of... 403f1e551a Examples of uses of the BSA: 403f1e551a

Atmospheric pressure The standard atmosphere (symbol: atm) is a unit of pressure defined as 101. = $F/A = (m \cdot g)/A$, where A is the surface area. Atmospheric pressure is thus proportional to the weight per unit area of the atmospheric mass above that Atmospheric pressure, also known as air pressure or barometric pressure (after the barometer), is the pressure within the atmosphere of Earth. 325 kPa (1,013. 25 hPa), which is equivalent to 1,013. 696 psi. The atm unit is roughly equivalent to the mean sea-level atmospheric pressure on Earth; that is, the Earth's atmospheric pressure at sea level is approximately one atm. 9212 inHg, or about 14. 25

millibars, 760 torr (or about 760 mmHg), about 29 403f1e551a

A black body at room temperature (23 °C (296 K; 73 °F)) radiates mostly in the infrared spectrum, which cannot be perceived by the human eye, but can be sensed by some reptiles. As the object increases in temperature to about 500 °C (773 K; 932 °F), the emission spectrum... 403f1e551a == Methods of calculating ASA == 403f1e551a The BBB, for example, protects the brain from harmful substances. Drugs with a lower TPSA (generally below 90 Å²... 403f1e551a == History == 403f1e551a == Star == 403f1e551a

Body mass index years of age. BMI is calculated as the body mass, in kilograms (kg), divided by the square of the body height, in square metres (m²); although this quotient has units of kilograms per square metre, BMI is frequently reported with these units omitted (despite not being a dimensionless quantity). The Surface-based Body Shape Index (SBSI) is far more rigorous and is based upon four key measurements: the body surface area (BSA), vertical Body mass index (BMI) is a value derived from the mass (weight) and height of a person 403f1e551a

Typically, there is a 4–10-fold variation in drug clearance between individuals due to differing the activity of drug elimination processes related to genetic and environmental factors. This can lead to significant overdosing and underdosing (and increased risk of disease recurrence). It is also thought to be a distorting factor in Phase I and II trials that may result in potentially helpful medications being prematurely rejected. The trend to personalized medicine is one approach to counter this weakness. 403f1e551a When the star's or planet's net emissivity in the relevant wavelength band is less than unity (less than that of a black body), the actual temperature of the body will be higher than the effective temperature. The net emissivity may be low due to surface or atmospheric properties, such as the greenhouse effect. 403f1e551a

Black-body radiation The radiation emitted is a continuous spectrum over all possible radiation wavelengths that depends only on the body's temperature. the absolute temperature of the body. For a black body surface, the spectral radiance density (defined per unit of area normal to the propagation) is independent Black-body radiation is the thermal electromagnetic radiation emitted from a body in thermodynamic equilibrium with its environment. A black body is an idealized opaque and non-reflective body 403f1e551a

According to health professionals, the fear of spread of... 403f1e551a

Health risks from dead bodies humans are not available, allometric scaling, which takes into account body surface area, is often used to compare doses in different animals, with useful The health risks of dead bodies are dangers related to the improper preparation and disposal of cadavers. —many resources are often expended on burying the dead quickly, and applying disinfectant to bodies for the specific purpose of preventing disease. Specialists say that spraying is a waste of disinfectant and manpower, that "resources that should be going into establishment of water supply, sanitation, shelter, warmth and hygienic food for the survivors are being applied to digging mass graves", and that "Time and time again, eminent and authoritative experts have pointed out that dead bodies do not constitute a health hazard". While normal circumstances allow cadavers to be quickly embalmed, cremated, or buried; natural and man-made disasters can quickly overwhelm and/or interrupt the established protocols for dealing with the dead. Under such circumstances, the decomposition and putrefaction of cadavers goes unchecked, and raises a series of health, logistical, and psychological issues. After disasters with extensive loss of life due to trauma rather than disease—earthquakes, storms, human conflict, etc 403f1e551a

Galileo was the first to demonstrate and then formulate these equations. He used a ramp to study rolling balls, the ramp slowing the acceleration enough to measure the time taken for the ball to roll a known distance. He measured elapsed time with a water clock, using an "extremely accurate balance" to measure the amount of water. 403f1e551a

Effective temperature Effective temperature is often used as an estimate of a body's surface temperature when the body's emissivity curve (as a function of wavelength) is not known. temperature of a star is the temperature of a black body with the same luminosity per surface area (FBol) as the star and is defined according to the Stefan–Boltzmann The effective

temperature (aka ET) of a body such as a star or planet is the temperature of a black body that would emit the same total energy as electromagnetic radiation 403f1e551a

== History == 403f1e551a

Body surface area In physiology and medicine, the body surface area (BSA) is the measured or calculated surface area of a human body. For many clinical purposes, BSA is a better indicator of metabolic mass than body weight because it is less affected by abnormal adipose mass. Nevertheless, there have been several important critiques of the use of BSA in determining the dosage of medications with a narrow therapeutic index, such as chemotherapy. For many clinical purposes, BSA is In physiology and medicine, the body surface area (BSA) is the measured or calculated surface area of a human body 403f1e551a

Equations for a falling body W. in the Sky". Falling body equations calculator A set of equations describing the trajectories of objects subject to a constant gravitational force under normal Earth-bound conditions. Assuming constant g is reasonable for objects falling to Earth over the relatively short vertical distances of our everyday experience, but is not valid for greater distances involved in calculating more distant effects, such as spacecraft trajectories. Assuming constant acceleration g due to Earth's gravity, Newton's law of universal gravitation simplifies to $F = mg$, where F is the force exerted on a mass m by the Earth's gravitational field of strength g . Archived from the original on 2008-03-31. Square Enterprises, 9826 Sagedale, Houston, Texas 77089 403f1e551a

A perfectly-insulated enclosure which is in thermal equilibrium internally contains black-body radiation and will emit it through a hole made in its wall, provided the hole is small enough to have a negligible effect upon the equilibrium. The thermal radiation spontaneously emitted by many ordinary objects can be approximated as black-body radiation. 403f1e551a Of particular importance, although planets and stars (including the Earth and Sun) are neither in thermal equilibrium with their surroundings nor perfect black bodies, black-body radiation is still a good first approximation for the energy they emit. 403f1e551a

Surface tension Surface tension is the energy per unit area due to having a surface in a liquid. It has the dimension of force per unit length, or energy per unit area Surface tension is the energy per unit area due to having a surface in a liquid. It has the dimension of force per unit length, or energy per unit area. The two are equivalent, but when referring to energy per unit of area, it is common to use the term surface energy, which is a more general term in the sense that it applies also to solids. Surface tension is used for liquids, while surface stress and surface energy are more commonly used for solids 403f1e551a

An example of its relevance is the tendency of liquid surfaces at rest to shrink to the minimum surface area possible. Because of the relatively high attraction of water molecules to each other through a web of hydrogen bonds, water has a higher surface tension (72.8 millinewtons (mN) per meter at 20 °C) than most other liquids. This allows objects with a higher density than water such as razor blades and insects (e.g. water striders) to float on a water surface without becoming even partly submerged. 403f1e551a The magnitude of the surface tension is connected to the forces between the molecules at the surface. Therefore surfactants are often used to reduce it so there is more contact between the liquid and another material, for instance detergents... 403f1e551a == False risks == 403f1e551a

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