

GLOSSARY OF TERMS

AEROSOL

Cigarette smoke is an aerosol, consisting of a cloud of very small particles, vapours and gases.

ALKALOIDS

A name given to a large group of chemicals that typically are found in seed plants and often have physiological effects on humans. Nicotine and caffeine are alkaloids.

AMBIENT SMOKE

The smoke in a room or localised environment. Ambient smoke is a mixture of sidestream smoke and exhaled mainstream smoke. (See also ETS.)

BIOMARKERS OF EXPOSURE

Substances that can be measured in a body fluid that show that a substance (e.g. cigarette smoke Toxicant) has been taken into the body. A Biomarker of Exposure for nicotine is its metabolite (metabolic breakdown product), cotinine.

BIOMARKER OF HARM

A specific biological molecule, change or effect that can be measured and that is indicative of the progress of a disease. For tobacco harm reduction we are interested in Biomarkers of Harm that both respond to exposure to cigarette smoke Toxicants and are indicators of disease progression.

CARBON MONOXIDE (CO)

A toxic gas formed during incomplete combustion, and by thermal degradation, of organic substances. It is present in smoke and measured both as a volume concentration (%) and total yield (mg/cig).

'CLEARING THE SMOKE'

A publication produced by The Institute of Medicine in the U.S.A. in 2001. It assessed the scientific basis for tobacco harm reduction, specifically with respect to PREPs.

COMPENSATION

Is a term that is used to reflect a more intense smoking behaviour for some smokers when switching from 'higher' to 'lower' tar products.

CORESTA

Co-operation pour les Recherché Scientifique Relatives au Tabacs; (Co-operation Centre for Scientific Research Relative to Tobacco). An open scientific body with many industry members involved in developing standardised procedures, practices and measurements made within the tobacco industry. [N.B. A Coresta unit is a measure of cigarette paper permeability. Coresta methods include analytical approaches to measuring cigarette smoke yields].

DEPENDENCE

The term used by many scientific bodies to describe Addiction. In the case of smoking, smokers can exhibit a range of behaviours that fulfil a set of criteria used to characterise dependence and reflect the difficulty for some to quit.

DOSE

Dose is the amount of smoke (containing in excess of 4000 chemicals) taken up by the body. In smoker studies dose will be measured in terms of the quantity of a smoker's intake of smoke and smoke-Toxicants over a particular period of time.

DOSE RESPONSE

Describes the relationship between Dose over time of a substance and the associated biological response. For cigarette smoking, it means that the greater the dose over time (i.e. numbers of cigarettes smoked, per day, per year) the higher the relative risk of contracting a smoking related disease.

DUTY OF CARE

A legal responsibility to use reasonable care under all relevant circumstances in the development, design, manufacture and sale of consumer products.

ETS (Environmental Tobacco Smoke)

A complex mixture of chemicals that appears in an environment (e.g. room) as a direct result of aged and diluted sidestream smoke and exhaled mainstream smoke. (Sometimes also described as ambient smoke.)

EPIDEMIOLOGY

The study of the incidence of morbidity and mortality in populations; the key science used to identify the risks of smoking.

EXPOSURE

Exposure to a substance means simply coming into contact. For cigarette smoking, Exposure is measured first and foremost as Human Smoker Yield. Not all of an exposure may be taken up by the body and therefore not all of an exposure becomes biologically significant (this is Dose).

FILTER ANALYSIS/STUDY

A method for estimating Human Smoker Yield (the amount of 'tar-in-use'), by measuring the amount of nicotine in a used cigarette filter and extrapolating to calculate tar that has passed through it. Maximum possible intake, Uptake and Dose can be estimated for smokers. FCTC Framework Convention for Tobacco Control.

GENE

A specific sequence of DNA that codes for a protein (e.g. such as an enzyme).

GENE EXPRESSION

The process whereby a gene is activated and translated into the protein it codes for.

GENOME

The entire genetic make up of a person or organism.

GENOMICS

The study of the gene expression in a genome. The application of Genomics may lead to the determination of gene expression profiles in the bodies of smokers that can be both linked to their dose of a specific toxicant and to disease progression.

HARM

Harm means causing physical or psychological damage or injury to a person, either permanently or temporarily.

HARM REDUCTION

Lessening the harm associated with risk taking behaviour without complete abstinence from that behaviour.

HOFFMANN ANALYTES

A list of around 44 constituents found in tobacco smoke, most of which are considered toxic. The list is named after the scientist Deitrich Hoffmann.

HUMECTANTS

An additive added to the tobacco blend - most usually glycerol and/or propylene glycol - which improve moisture retention and can be used to dilute smoke.

HUMAN SMOKER YIELD

Measured using Filter Analysis, it is the amount of smoke that enters the mouth following puffing.

INTAKE

Amount of smoke inhaled by the smoker.

IN VITRO

Refers to biological studies conducted in a test tube or other artificial laboratory vessel. (as in 'in vitro', literally, 'in glass'.) E.g. in vitro toxicity testing.

IN VIVO

Refers to studies conducted in a living body. E.g. in vivo animal testing.

IOM

Institute of Medicine in the USA

ISO (International Organisation for Standardisation)

A world-wide federation of national bodies covering standardisation in all fields except electrical and electronic engineering standards. ISO is the world's largest non-governmental system for voluntary industrial and technical collaboration at the international level, and co-ordinates the exchange of information on international and national standards, technical regulations and other standards-type information.

ISO SMOKING REGIME

The conventional machine-based method adopted internationally for measuring and ranking cigarettes by smoke yield under controlled conditions. Typical (ISO) conditions are puff volume, 35ml; puff duration, 2 seconds; puff frequency, once a minute, to a fixed length from the tipping paper or filter of a cigarette (often referred to as butt length).

LEAGUE TABLE

A table produced by a Government Body or Independent Authority ranking, listing or grouping the brands on a given market according to the ISO machine-measured yields of smoke components (NFDPM, nicotine, carbon monoxide, and occasionally other smoke constituents).

MAINSTREAM SMOKE

The smoke leaving the filter end of a cigarette during the smoking process.

METABOLITES

The biological breakdown products of an original substance. For example, the body metabolises nicotine into cotinine. Cotinine is a metabolite. See Biomarkers of Exposure.

MOLECULAR EPIDEMIOLOGY

A science that focuses on the contribution of genetic as well as environmental factors that influence disease susceptibility and progression in populations. It can explain how genetic variation in populations can also influence the Biomarker of Exposure and Biomarker of Harm responses across a population exposed to (the same) cigarette smoke.

MONOGRAPH 13 (M13)

A publication from the US National Cancer Institute, NCI, in 2001, assessing the public health impact in the USA of the introduction of cigarettes with low machine measured yields of tar and nicotine.

MORBIDITY

The number of the people with a particular disease in a population when applied to epidemiological studies.

MORTALITY

The number of people who die of a particular disease in a population when applied to epidemiological studies.

NCI

National Cancer Institute. A government organisation in the USA.

NFDPM

The scientific term for 'tar'. It stands for Nicotine-Free, Dry Particulate Matter or TPM (Total Particulate Matter) minus nicotine and minus water (formerly known as PMWNF).

NICOTINE

The major alkaloid in tobacco. Nicotine in cigarette smoke is often expressed as milligrams of nicotine yield per cigarette. Nicotine in tobacco leaf is often expressed as a percentage on a dry weight basis.

NITRIC OXIDE OR OXIDES OR NITROGEN (NOX)

These are toxic gases known to be present in smoke. They are measured both as a volume concentration (parts per million) and total yield (ug/cig).

PARTICULATE PHASE

The substances in smoke that are particles and that can be trapped on a Cambridge filter pad.

PREP

Potentially Reduced Exposure Product, a term created by the US Institute of Medicine in 'Clearing the Smoke'. Defined as; "A product that (1) results in the substantial reduction in exposure to one or more tobacco toxicants and (2) can reasonably be expected to reduce the risk of one or more specific diseases or other adverse health effects".

PASSIVE SMOKING

Usually regarded as the inhalation, in the course of the breathing cycle, of ambient smoke.

PUFF DURATION

The interval of time during which suction is applied at the butt end of a cigarette during the smoking process.

PUFF FREQUENCY

The number of puffs in a given time.

PUFF INTERVAL

The time between puffs.

PUFF NUMBER

The number of puffs recorded, on a smoking machine, smoking a cigarette to a specified butt length.

PUFF PROFILE

A graphical representation of flow rate through the cigarette during the puff as a function of time. It describes the shape of the puff taken either by a smoking machine or the human smoker.

PUFF VOLUME

The volume leaving the butt end of a cigarette during the puff duration.

REDUCED TOXICANT PRODUCT

A product that produces lower amounts of specific smoke toxicants per unit of tar (compared to a reference or benchmark product) as measured under machine smoking conditions. A Reduced Toxicant Product is a prototype product that could, following further testing in human use, become accepted as being a PREP.

RETENTION

The amount of smoke or its constituents retained on the surface of the mouth and respiratory tract. i.e. the difference between the amount of smoke inhaled and exhaled. It is measured by combining Filter Analysis and chemical analysis of the exhalate.

RISK

Risk is an estimate of the likelihood that harm will occur in a population, usually estimated through epidemiological studies. It is typically difficult to determine the risk to an individual from population risk estimates.

SIDESTREAM SMOKE (SS)

The smoke which leaves the tip of a cigarette during the smoking process rather than from the butt end. This is a major contributor to ETS.

SMOKELESS TOBACCO PRODUCTS

Non combustible tobacco products e.g. Snus.

SNUS

A Swedish style of pasteurised smokeless tobacco which is placed under the top lip. It then releases an amount of nicotine. Sold as loose tobacco or in pouches.

TAR

This term has been variously used to mean NFDPM.

TAR-IN-USE

An indicator of the amount of smoke taken into the mouth by a smoker.

TOXICANT

A substance (e.g. from tobacco or its smoke) that is harmful to the body - it may be poisonous or may cause cancer or other diseases.

TOXIN

A poisonous substance produced by living cells or organisms.

TSNA's

Tobacco Specific Nitrosamines, constituents uniquely found in tobacco smoke and included on the Hoffman list.

UPTAKE

Amount of smoke from the smoker's intake which is retained by the mouth and respiratory tract.

VAPOUR PHASE

This is the portion of smoke which is not particulate. It includes gases and volatile chemicals such as formaldehyde and benzene.

VENTILATION (Cigarette)

The amount of air which enters the cigarette by means other than through the lit/burning end of the cigarette. It is normally expressed as a percentage of the total volume drawn from the unlit cigarette. Filter/tip ventilation refers to the amount of air entering through the tipping/plugwrap combination and tobacco rod ventilation refers to the air entering through the cigarette paper.