Person—fraction of inspired oxygen, N.NN

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Person—fraction of inspired oxygen, N.NN

Identifying and definitional attributes

Metadata item type:	Data Element
Short name:	Fraction of inspired oxygen
Synonymous names:	FiO2
METEOR identifier:	320431
Registration status:	Health!, Recorded 14/07/2006
Definition:	Fraction of inspired oxygen in a person's arterial blood gas.
Data Element Concept:	Person—fraction of inspired oxygen
Value Domain:	Fraction N.NN

Value domain attributes

Representational attributes

Representation class:	Ratio	
Data type:	Number	
Format:	N.NN	
Maximum character length:	3	
	Value	**Meaning**
Supplementary values:	9.99	Not stated/inadequately described

Data element attributes

Collection and usage attributes

Guide for use:	Range 0.21 to 1.00 Units of measurement are %÷100 to 2 decimal places.

Source and reference attributes

Submitting organisation:	ANZICS Database Management Committee
Reference documents:	Knaus WA, Draper EA, Wagner DP, Zimmerman JE. APACHE II: a severity of disease classification system. Crit Care Med 1985;13:818-828. Le Gall J-R, Lemeshow S, Saulnier F. A new simplified physiology score (SAPS II) based on a European/North American multicenter study. JAMA 1993;270:2957-2963.

Relational attributes

Implementation in Data Set Specifications:

Intensive care DSS
Health!, Recorded 14/07/2006

DSS specific information:

Used in the calculation of APACHE II, APACHE III, and SAPS II scores.

The APACHE II and APACHE III algorithm for oxygenation uses the alveolar-arterial (A-a) gradient value for scoring when the FiO_2 is 0.50 or greater. Use the lowest PaO_2 score only if the FiO_2 is less than 0.5.

SAPS II uses the PaO_2 / FiO_2 ratio for scoring if the patient is ventilated or on continuous positive airway pressure (CPAP).

The calculation of A-a gradient uses the formula:

A-a gradient = 713 x FiO_2 – PaO_2 – $PaCO_2$

All variables used in the calculation of the A-a gradient must come from the one blood gas sample.

APACHE III, APACHE II and SAPS II requirements:

For patients with assisted breathing, the fraction of inspired oxygen is read from the controlled oxygen source. E.g., Venturi masks, ventilator and CPAP systems with calibrated oxygen blenders. For patients breathing unassisted, i.e., room air, the FiO_2 is recorded as 0.21.

If a patient is on an uncontrolled oxygen source, the table below allows for the conversion of oxygen flow in L/min to FiO_2.

O_2 (L/min)	1	2	3	4	5	6	8	15	15*Reservoir mask
FiO_2	0.23	0.25	0.27	0.30	0.35	0.40	0.45	0.50	0.70