The average VAS evolution is shown in the following table:

| Day | Group 1 | | Group 2 | | Group 3 | |
|---|---|---|---|---|---|---|
| | n | VAS (mean) | n | VAS (mean) | n | VAS (mean) |
| D 0 | 50 | 4.9 | 50 | 5.1 | 50 | 5.2 |
| D 1 | 46 | 3.0 | 45 | 3.5 | 48 | 2.6 |
| D 2 | 43 | 1.8 | 44 | 2.8 | 45 | 1.7 |
| D 3 | 42 | 1.6 | 41 | 2.3 | 42 | 1.5 |

*Conclusions*: The analgesic levels in the 3 groups appear satisfactory (the group piroxicam + paracetamol is logically slightly better). The method for collecting the information figures seems practical despite the loss of 31.3% of the patients.

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**Key words**: analgesics; paracetamol; piroxicam; visual analog scale

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## Experimental Model allowing Comparison between Different Ways of Oxygen Administration

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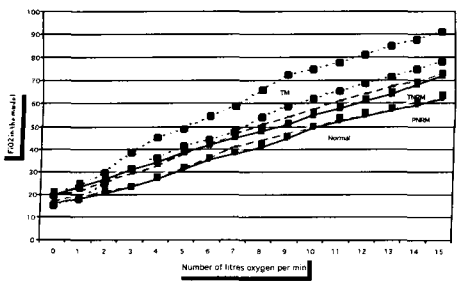
*Objectives*: We compared the $FiO_2$ available in a normal mask, a partial non-rebreathing mask (PNRM), a total non-rebreathing mask (TNRM), and a new way of administering oxygen, the Tusk Mask II (TM II).

*Method*: The Tusk Mask II is made up of a normal mask in which a lateral 22 mm hole is made on each side. A fixed a ringed tube 18 cm long and 22 mm in diameter is attached to each side. The experimental model consists of tightly sealing the four types of masks successively onto a board. A hole made in the board allows an oxygen monitor, the OM-100, to be fixed tightly into a T form.

Ten healthy volunteers breathed normally into the apparatus. The $FiO_2$ are measured at the end of the breathing-out phase and at the end of the breathing-in phase for an intake of oxygen increasing successively from 0 to 15 litres per minute. A 20-minute stabilisation period between each measure was necessary at each change in the number of litres of oxygen administered.

*Results*: The results for administration of oxygen for the four types of masks were:




*Conclusion*: The $FiO_2$ always is higher when oxygen is given by the Tusk Mask II. In this example, there are no significant differences of $FiO_2$ between the normal mask and the non-rebreathing mask.

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Key words: administration; masks; oxygen; Tusk Mask II

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## Theoretical Saving of Oxygen in Disaster Situations Using a New Oxygen Administration Mode: The Tusk Mask II

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*Objectives*: The aim is to calculate possible savings in using a new oxygen administration mode in a disaster situation—the Tusk Mask II (TM II).

*Method*: We start with a concrete example, a carbon-monoxide intoxication of 20 patients. All of them received 6 litres of oxygen per minute during 45 minutes, the time required for their evaluation, triage, and evacuation to hospitals for their admission. We calculated the quantity of carboys of 2.8 litres necessary to provide such oxygenation. The administration of 6 litres per minute generates a certain $FiO_2$ within the mask (measured in a reproducible experimental model). To obtain the same value of $FiO_2$, we identified which oxygen output should be administered by the TM II. The latter is constituted by a normal mask in which one would pierce a lateral hole of 22 mm of diameter on each side joined by an annulated pipe of 18 cm long and 22 mm diameter.

*Result*: 6 litres per minute x 45 minutes x 20 patients = 5,400 litres and a carboy of 2.8 litres contains 2.8 x 150 bars = 420 litres. Therefore, the need with classic masks will be 5400/420 = 13 carboys. The following table taking the measures done on experimental model allows to compare the $FiO_2$ in a classic mask and in a TM II.

| Litres/min | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|---|
| $FiO_2$ in classic mask | 19.2 | 21.1 | 25.0 | 28.7 | 32.3 | 37.4 | 41.6 | 46.6 |
| $FiO_2$ in TM II | 19.6 | 23.0 | 29.5 | 38.6 | 45.0 | 49.0 | 54.6 | 58.8 |

| Litres/min | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|
| $FiO_2$ in classic mask | 50.6 | 54.1 | 57.4 | 61.1 | 63.8 | 67.2 | 69.9 | 73.0 |
| $FiO_2$ in TM II | 66.1 | 72.4 | 75.0 | 77.7 | 80.9 | 84.8 | 87.8 | 91.2 |

This table allows prediction of the same $FiO_2$ administered to the patient, we will need a theoretical flow of 3.5 litres per minute. Using the same computation used above: 3.5 litres per minute X 45 minutes X 20 patients = 3,150 litres of oxygen; A carboy of 2.8 litres contains 2.8 X 150 bars = 420 litres; The need with TM II will be 3,150/420 = 8 carboys.

*Conclusions*: The use of TM II allows a saving of oxygen sources, not as essential in emergency situation as it could be in a disaster situation.
**Key words**: administration; carbon-monoxide; computation; disaster; model; oxygen; masks; Tusk Mask II
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## A New Approach for Casting Fingers, Hands, or Arms within Seconds

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The authors present a new approach for casting, their experience with it, and compare its practicability with the usual techniques (plaster of Paris and casting with thermoplastics). The new approach is based on a Hungarian-Swiss patent called the "Chrisofix" concept. All of the corresponding splints have a corrugated, thin aluminium core covered with cotton- or polyamide-laminated polyethylene layers. The form of the individually adjustable splints/ortheses depends on the target joint/s of immobilisation. Thus, the limitation of function is reduced to the necessary minimum.

The comparisons of the different casting techniques discussed are based on the authors' experiences with the conventional techniques and with different types of splints based on the new approach in >100 cases partially during SFOR and KFOR missions, respectively. Reports from Hungarian National Institutes of Traumatology and Rheumatology are included in the discussion. Its quick applicability and its ability to ensure functioning of the uninvolved joints are the advantages of this new approach and are the reasons that make it so useful in field medical practice and disaster situations.
**Key words**: casting; "Chrisofix"; fractures; immobilization; ortheses; splints; techniques
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## Drug Consumption in Traffic Accidents

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*Introduction*: Traffic accidents constitute an important cause of morbidity and mortality in developed countries, mainly in young people. In Spain, around 5,000 people die annually due to these accidents, with >100,000 injured. Drug and alcohol consumption, as well as the nonuse of safety measures, influence the incidence as well as the severity of the injuries of the traffic victims.
*Objectives*: We set out to evaluate the existing relationships between the consumption of alcohol or other drugs among injured drivers, with respect to the use or nonuse of safety measures and the severity of the injuries produced in the accident.
*Methods*: We studied 62 drivers involved in and injured from traffic accidents and who were transported to our Hospital Emergency Service. The classic descriptive variables were analyzed: age, gender, means of locomotion, alcohol ingestion, drugs, use of safety measures, determination of type of toxic materials in the urine and blood alcohol levels, main diagnosis, index of gravity (Scale of Crams), and disposition of the patient.
*Results*: Of the study population, 68% were men (32%, women), with an average age of 30.22 ±12.3 years. Only 45.2% of the persons used a car safety belt or helmet, 38% affirmed to have ingested alcohol, and 1.6% to have consumed another type of drugs before the accident. Moreover, blood alcohol level was >0.5 g/100 ml. in 57.3% and toxic materials were present in the urine in 16.1% (all the patients with positive toxic screens also had alcohol in their blood). Cannabis was the drug most frequently found (65.3% of the positive determination). Of these patients, 37.4% needed to be admitted to hospital, and 29.2% injured were considered to be injured seriously. Among those that had a positive result for alcohol in blood, 85.1% did not use safety measures, and 87.8% were admitted to hospital. Among the victims who had consumed other drugs, 100% did not use safety measures and needed to be admitted; 70.7% of patients intoxicated with some kind of drug were considered serious.
*Conclusions*: A high proportion of alcohol consumption and other drugs exists among the drivers of motor vehicles that are involved in traffic accidents, and a high disproportion exists between the recognition of such consumption and the analytical determinations. Drug consumption is related clearly to the nonuse of safety measures, having the potential to increase the severity of the injuries and the cost of medical resources.
**Key words**: accidents; alcohol; consumption; drivers; drugs; injuries; safety measures; traffic
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## Model of Disaster Medical Response in Metropolitan Taipei

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*Introduction*: Disasters are tragedies that overwhelm our communities, destroy our property, and harm our population. Since 21 September 1999, we suffered from a major disaster (earthquake) that killed about 2,347 people, and injured approximately 9,400 people. Three days later, there were 320,000 people (12.8%) who were staying in shelters, because their houses (81,000) were totally or partly damaged. The affected area was suburban, and the amount of damage was limited, but the disaster medical response was very important. For further preparation, it was necessary to build a model for disaster medical response in the metropolis.
*Objective*: This study should explain the importance of building a model of disaster medical response in the