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Minor Cervical Trauma Claims

COMPARATIVE STUDY

CEA/AREDOC - CEREDOC 2004

Foreword

A rise in cervical injury claims was first noted in 1999. Some countries reported many problems whereas others had no difficulties. Faced with this imbalance and in the absence of objective conclusions in this field, the Comité Européen des Assurances (CEA) and the Association for the Study and Compensation of Bodily Injury (AREDOC, FR) jointly began a comparative study on claims involving cervical spinal injuries.

The aim was, *inter alia*, to estimate claims trends in different countries, their causes and possible means of intervention open to insurers to try to influence them.

The first summary of replies received, in 2000, showed major disparities in data. The study was therefore redefined and focused on the impact of minor cervical trauma.

A common definition of such trauma was drafted thanks to AREDOC and CEREDOC (European Confederation of Experts in Assessing and Compensating Bodily Injury) so that all countries could use a similar approach when dealing with this concept.

A new questionnaire, taking this definition into account, was circulated to the various countries in 2002. It was also felt preferable to update the figures, previous data referring to 1998 claims.

This update is presented here. The study raises several points: statistical but also medical (specific training of doctors, medical investigations undertaken), or legal (concept of causality, indemnifiable damage) aspects, not forgetting measures taken by insurers and discussions which may be undertaken in this field.

Concerning the medical aspects, only single injuries requiring treatment are taken into consideration regardless of whether there are after-effects.

Furthermore, the study does not deal with the technical aspects of vehicle design such as headrests, seats....

Special thanks go to the AREDOC and CEREDOC teams who contributed actively to this exercise.

But this study would not have seen the light of the day without the essential contribution of the participating national insurance associations in numerous European countries or without the competence of members of CEA's Motor Committee "Services and Claims" Subcommittee and its "Bodily Injury" Working Group, under the active chairmanship of Mr Guy Chappuis.

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INTRODUCTION

10 countries replied to the questionnaire circulated in July 2002 (AU 2122 [07/02]):

Belgium

Switzerland

Germany

Spain

Finland

France

Italy

Netherlands

Norway

United Kingdom

0. COMMON DEFINITION OF MINOR CERVICAL TRAUMA

In order to analyse the possible after-effects of phenomena with no initial detectable injury, a minor or benign cervical trauma may be defined as a lesion of the cervical spine, caused by acceleration-deceleration mechanisms (due for example to pronounced extension and/or flexion more or less accompanied by torsion), without neurological complications and without affecting the osseous, nervous or ligamentary-disc structures, which may lead to painful symptoms when at rest or during movement and be accompanied by reduced mobility of the cervical spine.

I. STATISTICAL ELEMENTS

1. Number of inhabitants and vehicles on the road

Country	Number of inhabitants (2003, in thousands)	Number of vehicles (2002, in thousands)
Belgium	10 310	5 737
Switzerland	7 316	4 808
Germany	82 433	53 306
Spain	40 683	25 066
Finland	5 220	3 980
France	59 637	35 396
Italy	57 321	42 107
Netherlands	16 195	8 389
Norway	4 528	2 752
United Kingdom	59 088	30 403

2. Total number of motor liability claims

Statistics show that Italy had the highest number of claims (4.7 million); then Germany (3. 960 million), the United Kingdom (2.9 million), France (2.5 million) and Spain (2.320 million) the number of claims diminishing by more than half between 1998 and 2000.

The number of claims also dropped in Germany but less spectacularly.

Belgium, Switzerland, Italy and Norway recorded a slight rise in the number of claims since 1998 whilst France, the United Kingdom and The Netherlands have seen no rise in numbers between 1998 and 2000.

Countries recording the lowest number of claims are: Finland (88 839), Norway (165 378), Switzerland (300 000).

3. Number of bodily injuries

In the majority of countries, the percentage of bodily injuries has scarcely risen since 1998. Bodily injuries represent between 8% and 18% of all claims.

It should however be underlined that although Spain saw a spectacular drop in the number of claims between 1998 and 2000, it had a significant rise in the number of bodily injury cases, which doubled in two years.

The countries recording the highest percentage of bodily injury claims are Italy (18% of all claims), the United Kingdom (17%) and finally Finland (13%).

Countries recording the lowest percentage of bodily injury claims are The Netherlands (8% of all claims), France (9%), Norway (9.1%).

The Netherlands however, for the last five years, has seen a 25% rise in the number of bodily injury claims although they note no significant rise in the number of liability claims.

4. Number of claims linked to minor cervical trauma

Statistics show that four countries recorded a very high rate of claims linked to cervical trauma: the United Kingdom (76% of bodily injuries), Italy (66%), Norway (53%) and Germany (47%).

Then come The Netherlands with a 40% rate. Spain and Switzerland have comparable rates of approximately 30%.

Only France and Finland record a low claims rate for cervical trauma (respectively 3% for France and 8.5% for Finland).

The statistics concerning the various points referred to above follow:

Country	Number of claims (bodily + material)	Bodily injury	Cervical trauma compared with the number of bodily injuries
Belgium	420 000	12% or 50 000	No data available
Switzerland	300 000	10% or 30 000	approx. 33% or 10 000
Germany	3 960 000	10.7% or 424 000	approx. 47% or 200 000
Spain	2 320 000	10.8% or 250 000	approx. 32% or 80 000
Finland	88 839	13% or 11 574	approx. 8.5% or 1000
France	2 500 000	9% or 225 000	approx. 3% or 6 750
Italy	4 700 000	18% or 846 000	approx. 66% or 558 000
Netherlands	600 000	8% or 48 000	approx. 40% or 19 200
Norway	165 378	9.1% or 15 000	approx. 53% or 8 000
United Kingdom	2 900 000	17% or 493 000	approx. 76% or 375 000

5. Cost of bodily injuries

The highest costs in overall value are recorded by Italy (7.48 billion euros), Germany (5,346 billion), France (3,950 billion) and Spain (2,199 billion).

With the exception of Germany, three other countries saw the cost of claims rise significantly between 1998 and 2000. The same applies to Belgium, Switzerland and Norway. Like Germany, there has been no rise in claims costs in The Netherlands.

Countries recording the lowest costs are Norway (121 million euros), Finland (190 million euros) and The Netherlands (800 million euros).

6. Cost of claims linked to cervical trauma

The cost of claims is particularly high in the United Kingdom (50% of bodily injury costs). Then come Switzerland, The Netherlands and Norway (40%) as well as in Italy (32.6%).

Countries with the lowest costs are France (0.5%), Finland (0.78%) and Germany (9% of bodily injury costs).

7. Average cost per claim linked to cervical trauma

Switzerland had the highest average cost in this area with approximately 35 000 euros per claim; then come The Netherlands (16 500 euros) and Norway (6 050 euros).

The countries with the lowest average cost are Finland (1 500 euros), Germany (2 500 euros), France (approximately 2 625 euros per claim) and the United Kingdom (2 878 euros). The United Kingdom indicates however that a similar amount must be added to this sum to cover legal costs and costs related to the accident.

The statistics concerning the various points referred to above follow:

Country	Cost of bodily injuries (in euros)	Cervical trauma (compared with bodily injury)	Average cost per claim linked to cervical trauma
Belgium	+/- 1.4 billion euros	no data available	no data
Switzerland	860 million euros	40% or 350 million	35 000 euros
Germany	5.346 billion euros	9% or 500 million	2 500 euros
Spain	2.199 billion euros	no data available	no data
Finland	190 million euros	0.78% or 1.5 million euros	1500 euros
France	3.950 billion euros	0.5% or 19.75 million	2 625 euros
Italy	7.48 billion euros	32.6% or 2.393 billion	4 288 euros
Netherlands	800 million euros	40% or 320 million	16 500 euros
Norway	121 million euros	40% or 48 million	6 050 euros
United Kingdom	2.159 billion euros	50% or 1.08 billion	2 878 euros

II. MEDICAL ASPECTS

1. Evaluation of bodily injury: specialists/ specific training

Belgium, Spain and France envisage in their regulation specialised training to assess bodily injury sanctioned by the issue of a university diploma.

In other countries participating in the survey (Switzerland, Germany, Finland, United Kingdom, Italy, Norway), insurers use specialists or experts (forensic medicine, orthopaedics, neurology) to assess bodily injury who have not had any specific insurance training.

In Finland, GPs may however specialise in insurance medicine although there is no specialisation in bodily injury assessment.

Furthermore, Switzerland indicates the existence, since 1998, of postgraduate training in accident insurance which does not however lead to a medical assessment certificate. A recently created association (Swiss Insurance Medicine), in which ASA participates, is proposing to establish a certificate in medical assessment.

It indicates in addition that experts designated by insurers are often challenged by the opposing party, causing unjustified slowness in handling compensation claims.

COUNTRY	BODILY INJURY ASSESSMENT: SPECIALIST/SPECIFIC TRAINING
BE	<ul style="list-style-type: none"> ▪ Specialists with post-university diplomas in the assessment of bodily injury acquired after basic training and/or initial specialisation
CH	<ul style="list-style-type: none"> ▪ Use of specialists without specific insurance training (neurology, orthopaedics, surgery, psychiatry...) ▪ Since 1998, postgraduate training in accident insurance but no medical assessment certificate ▪ Pb: no contradictory assessment and insurance experts are often challenged by the other side (slowness in managing claims)
DE	<ul style="list-style-type: none"> ▪ Specialists from the medical corps (specialisation in insurance and medical research) ▪ But no specific training in this area
ES	<ul style="list-style-type: none"> ▪ There are special university courses: Masters in the evaluation of bodily injury, Masters in insurance medicine or specialist in bodily injury assessment. ▪ Forensic medical specialists have reinforced their training in the field of bodily injury assessment.
FI	<ul style="list-style-type: none"> ▪ Specialisation depends on the type of injury, generally recourse to orthopediatricians and neurologists. ▪ Diagnosis done on the basis of documents provided by the patient, no auscultation. ▪ No specialisation in the assessment of bodily injury for insurance purposes. However, GPs may specialise in insurance medicine
FR	<ul style="list-style-type: none"> ▪ Recourse to bodily injury assessment specialists ▪ Specific training sanctioned by a diploma on legal compensation of bodily injury or the CAPEDOC: (capacity to exercise expertise). ▪ There are two nationally recognised university diplomas

COUNTRY	BODILY INJURY ASSESSMENT: SPECIALIST/SPECIFIC TRAINING
IT	<ul style="list-style-type: none"> ▪ Recourse to forensic specialists
NL	<ul style="list-style-type: none"> ▪ No specific training
NO	<ul style="list-style-type: none"> ▪ No specific training ▪ Recourse to other similar medical disciplines (neurology, psychiatry...)
UK	<ul style="list-style-type: none"> ▪ No specialities: forensic experts with various qualifications diagnose MCTs ▪ Specialists examine the worst cases of bodily injury

2. Investigations undertaken by doctors to diagnose an MCT

Belgium, Switzerland and Spain indicate that the patient's medical history¹ is the first stage in diagnosis.

In Spain, medical history is generally followed by a clinical examination, study to attribute the injuries to the accident and an analysis of the patient's previous state. Sometimes other examinations are necessary (RX, EMG, ACT...)

Belgium refers to an informative checkup and a radiological scan (simple if possible because in practice there is often **costly and systematic recourse to a scanner or to an MRI**), also practiced in Switzerland.

Switzerland mentions the existence of a documentary file for the first consultation after a cranio-cervical acceleration trauma introduced in March 2003. This questionnaire aims at establishing as soon as possible a safe diagnosis and at guaranteeing adequate therapy in order to avoid later changes in medical history and diagnoses.

Finland, France and The Netherlands said that an informative checkup is made, followed, in France and Finland, by a clinical examination.

France indicates that this examination is completed by a neurological examination as well as a study of the victim's previous state of health. Finally, there is a discussion between experts involving the doctor and the patient on imputing after-effects to the injuries, without which their assessment is impossible. This discussion covers the probable criteria for the complaint, the circumstances of the accident, its development but also the general and previous state of the patient.

In the United Kingdom, Italy and Norway, a clinical or radiological examination is undertaken.

Germany says that an initial standardised diagnosis has been developed by insurers.

¹ All information collected by the doctor from a patient or his/her relatives on the patient's prior medical background and the background to the illness for which he/she is consulting the doctor (Office de la langue française, 2000).

COUNTRY	MCT DIAGNOSIS: WHAT INVESTIGATIONS
BE	<ul style="list-style-type: none"> ▪ Previous medical history ▪ Informative checkup (co-operation of the injured party) ▪ Radiological examination (simple if possible with dynamic proof). Unfortunately often systematic recourse to scanners and MRI
CH	<ul style="list-style-type: none"> ▪ Previous medical history ▪ Clinical examination and imaging examination (standard X-rays, MRI, CT). ▪ Documentary file for the 1st consultation after a cranio-cervical acceleration trauma in order to avoid changes in medical history
DE	<ul style="list-style-type: none"> ▪ Different studies show that numbers of diagnosis depend on the medical specialities. ▪ DE insurers have developed a standardised initial diagnosis including objective and subjective criteria as well as a standardised scale of gravity similar to the WAD scale (Quebec Task Force, Spitzer, Walter, SPINE Journal 5/95)
ES	<ul style="list-style-type: none"> ▪ Previous medical history ▪ Clinical examination ▪ Study of previous history and attribution ▪ Additional examinations (X-rays, NMR, EMG, ACT...)
FI	<ul style="list-style-type: none"> ▪ Informative checkup ▪ Clinical examination (CT, MRI) ▪ Radiography no value in the majority of cases
FR	<p>Assessment includes three major steps:</p> <ul style="list-style-type: none"> ▪ Establishing the circumstances of the occurrence of the traumatism ▪ Passive and active clinical examination completed by a neurological examination and study of the previous state ▪ Discussion on imputing after-effects to the injuries (criterion of probability of the complaint, medical and medico-legal aspect)
IT	<ul style="list-style-type: none"> ▪ Radiographical examination and visit to a specialist
NL	<ul style="list-style-type: none"> ▪ Information on the circumstances of the accident, clinical and/or radiological examination
NO	<ul style="list-style-type: none"> ▪ Clinical/radiological examination
UK	<ul style="list-style-type: none"> ▪ Clinical examination ▪ Description of the symptoms by the patient ▪ Examination of the medical notes

III. LEGAL ASPECTS: CAUSALITY

A. Concept of causality

1. De jure or de facto causality

In Germany, causality is a fact of law. The onus of proof with regard to injuries caused by an accident devolves on the victim. In accordance with § 286 of the ZPO (German Code of Civil Procedure), the victim must provide to the court practical and convincing proof of the existence of the injury. In accordance with § 287 of the ZPO, there is a presumption of proof concerning the consequences linked to the injury: hence, it is sufficient for the victim to say that all the consequences of the injury are probably due to the accident.

In Belgium, Spain and the United Kingdom, causality is de facto. In France, it is de jure as in The Netherlands where the conditions of application are very favourable for victims.

In Swiss law, injury may only be attributed to an event if there is a natural and adequate causal link with this event (cumulative condition).

The natural causality devolves from fact. It falls within the competence of the doctor and must be compared with a preponderant level of probability. It must be accepted even if the event in question only partially caused the impairment.

Once the natural causality has been accepted, its adequacy must be determined. A cause is adequate when, depending on the course of events and general experience of life, it is likely to encourage the result which occurred. It is a way of legally attributing consequences to an indemnifiable event. Adequate causality is a question of law. It falls strictly under the competence of the courts.

The question of whether causality is de facto or de jure is unknown in Finnish law. However, the Supreme Court underlined the fact that causality should be understood in different ways depending on whether it is considered by doctors or by courts.

In Italy, the rules of liability and the onus of proof are established by law.

Material causality is established on the basis of an assessment of the facts by the forensic scientist.

COUNTRY	DE JURE OR DE FACTO CAUSALITY
BE	<ul style="list-style-type: none">▪ Causality is de facto
CH	<ul style="list-style-type: none">▪ The causal link must be natural (de facto established by the doctor) and adequate (de jure)
DE	<ul style="list-style-type: none">▪ Causality is de jure ("full proof" + rules of proof facilitated by admission of probable facts)
ES	<ul style="list-style-type: none">▪ Causality is de facto
FI	<ul style="list-style-type: none">▪ Notion of causality being de facto or de jure is unknown in Finnish law. The Supreme Court recognises that medical causality differs from causality as understood in case-law

COUNTRY	DE JURE OR DE FACTO CAUSALITY
FR	<ul style="list-style-type: none"> ▪ Causality is de jure determined by the courts on the indications of the doctor
IT	<ul style="list-style-type: none"> ▪ Rules of liability and onus of proof determined by law but material causality is established depending on the opinion of the forensic scientist
NL	<ul style="list-style-type: none"> ▪ Causality is de jure. Conditions of application are however very much in the victim's favour
NO	-
UK	<ul style="list-style-type: none"> ▪ Causality is de facto

2 . *Onus of proof*

In Germany, the onus of proof devolves on the victim. He must prove the existence of his prejudice as well as the causal link between the injury and the accident. If the victim showed symptoms which he claims to have suffered before the accident and if the proof of the causal link is missing, the insurer need only pay compensation arising out of proof of the causal link for injuries after the accident.

If the victim is not able to provide this proof, his claim will be rejected.

In Belgium, France, the United Kingdom, Norway and Italy, the onus of proof devolves on the victim. The same applies in Spain where this is a “iuris tantum” presumption. Italy adds that it is not necessary to prove the existence of a causal link since proof of the damage is sufficient.

In Switzerland, the onus of proof of injury and the causal link devolve on the person claiming the insurance benefit, i.e. the victim. The proof may only concern natural causality and not adequate causality, which is a value judgement.

In Finland, the onus of proof reverts in principle to the victim. The courts however have discretionary powers. The Supreme Court based itself on numerous assessments undertaken by the social security bodies (medico-legal services).

In The Netherlands, there is a reversal of the onus of proof with regard to bodily injuries (in particular for non-quantifiable injuries).

COUNTRY	ONUS OF PROOF
BE	<ul style="list-style-type: none"> ▪ In principle, the onus of proof devolves on the victim
CH	<ul style="list-style-type: none"> ▪ Onus of proof of injury and natural causal link devolve on the injured person
DE	<ul style="list-style-type: none"> ▪ Proof of injury and causality devolve on the victim ▪ If symptoms precede the accident and if proof of the causal link is missing, the insurer need only pay compensation arising out of the proof of the causal link for injuries after the claim
ES	<ul style="list-style-type: none"> ▪ Proof devolves on the victim
FI	<ul style="list-style-type: none"> ▪ In principle, the plaintiff but the courts have discretionary power. The Supreme Court has based itself in numerous decisions on assessments undertaken by social security bodies (medico-legal services)
FR	<ul style="list-style-type: none"> ▪ In principle, the victim
IT	<ul style="list-style-type: none"> ▪ Onus of proof devolves on the injured person
NL	<ul style="list-style-type: none"> ▪ Reversal of the onus of proof with regard to bodily injury in Dutch law (in particular for non-quantifiable injuries)
NO	<ul style="list-style-type: none"> ▪ Onus of proof up to the victim
UK	<ul style="list-style-type: none"> ▪ Onus of proof devolves on the injured person

3. Causality established by the courts or the doctor

In Germany, the court is assisted by experts in bio-mechanics.

In Belgium, France and Italy, the court decides on the basis of the medical opinion.

In Switzerland, the court freely decides on the natural causality based on the medical assessment and other means of proof available (police report, analysis of the dynamics of the accident...).

It also judges adequate causality. This is a value judgment which is not based on the provision of proof. Adequate causality being de jure, it may be freely reviewed by the Federal Tribunal in the framework of an appellate recourse (unifying function of the supreme court).

In Spain, the court decides following assistance from a legal expert (legal-medical advisor).

In Finland, the final decision is down to the court. But doctors intervene in the compensation process.

In the United Kingdom, in the absence of agreement between the parties, the court determines the causal link on the basis of medical proof. The doctor's role is limited to the presentation of a medical opinion.

Finally, in The Netherlands, the courts decide on the causal link based on a medical opinion from an independent expert or the victim's lawyer.

COUNTRY	CAUSALITY ESTABLISHED BY DOCTORS OR COURTS
BE	<ul style="list-style-type: none"> ▪ The court decides on causality upon medical opinion
CH	<ul style="list-style-type: none"> ▪ The court decides freely if the causal link is natural and adequate
DE	<ul style="list-style-type: none"> ▪ The court assisted by experts in bio-mechanics
ES	<ul style="list-style-type: none"> ▪ The court is assisted by a medical expert (legal-medical advisor)
FI	<ul style="list-style-type: none"> ▪ In fine, causal link determined by the court. In the compensation process, causal link determined by doctors
FR	<ul style="list-style-type: none"> ▪ Causality is determined by the court following information from the doctor
IT	<ul style="list-style-type: none"> ▪ Causality depends on a court decision or based on a forensic assessment
NL	<ul style="list-style-type: none"> ▪ In most cases, the court determines the causal link based on a medical opinion from an independent expert or the victim's lawyer
NO	-
UK	<ul style="list-style-type: none"> ▪ In the absence of agreement between the parties, the courts determine the causal link based on medical proof. The doctor merely gives an opinion

4. Impact of dynamic and bio-dynamic experiments

In Germany, dynamic and bio-dynamic experiments are taken into consideration in order to assess whether the accident could or could not cause a cervical trauma. The majority of courts refuse to acknowledge cervical trauma if the speed difference between the vehicles at the time of the collision is under 10 km/h.

If the difference is between 10 and 30 km/h, the courts presume the existence of cervical trauma. This trauma is taken as fact when the difference is over 30 km/h.

In Belgium, the outcome of these experiments, undertaken on serious cases, are only now beginning to surface.

In Switzerland, assessment of accident dynamics is often based on consultations, which are insufficiently detailed from a technical point of view, which may be the reason for a wide range in the calculation of delta-v values.

This is why the ASA has undertaken, in co-operation with the Working Group on the mechanics of accidents and the Dynamic Test Center (DTC), a study on "Vehicle deformation in rear-end collisions" (CRASH study).

The results of this study, which give valuable information on the deformation of vehicles in low-speed crashes, are available free to insurers and interested bodies.

The objectivity of data collected should improve the admissibility of information on accident dynamics by the courts and victims' lawyers.

Since 2001, expert assessments intended to analyse accidents in order to determine their objective degree of gravity have sometimes been used.

In addition to this data and purely technical surveys, there is a tendency to promote bio-mechanical assessment because the bio-mechanical expert may, thanks to his knowledge, provide the victim with technical values relating to his medical situation. He may also assess whether the damage being claimed is admissible or not.

In Switzerland, Professor Walz is the only person to deal with bio-mechanical assessments for which reason they are often undertaken in Germany.

In Italy, the assessment of the causal link via a bio-mechanical reconstruction of the accident must be authorised by the courts. They rarely give such authorisation. The costs of such tests are high and seem sometimes unjustified vis-à-vis the aim of the case.

In Finland, such experiments have had little impact on the compensation process certainly because of the fact that they are in a few number. These experiments have not however been challenged by the courts.

In France and the United Kingdom, experiments relating to dynamics or bio-dynamics have not affected the compensation process or proceedings before the courts.

In The Netherlands, the scope of dynamic and biodynamic experiments remains limited, like in Spain where experience of dynamics and bio-dynamics remains little used.

COUNTRY	IMPACT OF DYNAMIC AND BIO-DYNAMIC EXPERIMENTS
BE	<ul style="list-style-type: none"> ▪ Dynamics and bio- dynamics: experimental stage, experience on serious cases just noted
CH	<ul style="list-style-type: none"> ▪ Study undertaken by the ASA “Vehicle deformation in rear-end collisions” (freely accessible data bank) in order to improve knowledge of the dynamics of accidents in particular for courts and lawyers. ▪ Since 2001, recourse to technical tests for analysing accidents + recourse to bio-mechanics (Pr Walz + assessment in Germany)
DE	<ul style="list-style-type: none"> ▪ Experiments in dynamics and bio-mechanics taken into consideration (difference of speed between vehicles at the time of the collision)
ES	<ul style="list-style-type: none"> ▪ Experience in dynamics and bio-mechanics currently little used
FI	<ul style="list-style-type: none"> ▪ Experiments in dynamics or bio-dynamics have very little effect on the compensation process or before the courts
FR	<ul style="list-style-type: none"> ▪ Dynamic and bio- dynamic experiments not currently used
IT	<ul style="list-style-type: none"> ▪ Assessment of the causal link by biomechanical reconstruction rarely allowed by the court. Costs too high
NL	<ul style="list-style-type: none"> ▪ Limited scope of experiments in dynamics and bio-dynamics
NO	-
UK	<ul style="list-style-type: none"> ▪ No influence of dynamics and bio – dynamics on assessments

B. Indemnifiable damage (quantifiable/non-quantifiable injuries)

In Germany, compensation is based on an objective evaluation of the injuries. This is a presumption, the court having to be convinced of the existence of a causal link which must be proved by the victim.

In Belgium, Spain, Finland and Norway, the two types of injury are taken into consideration.

In Switzerland, from a causal point of view, no distinction is made between quantifiable and non-quantifiable injuries. All injury is indemnifiable where there is an adequate causal link with the occurrence of the accident.

In the majority of cases, the person responsible or the state insurer is obliged to take into consideration non-quantifiable injuries which constitute the very essence of the problem in this type of trauma.

In Italy, non-quantifiable injuries are also reimbursed upon the recommendations of the forensic expert.

In France, the doctor, after having undertaken his examination and expert evaluation decides on the nature of the medically identifiable after-effects, i.e. assessable by an appropriate clinical examination.

In the context of minor trauma, i.e. those which are without neurological complications or documented osseo-ligamentary disc injuries, the victim may report intermittent pain triggered off by precise causes requiring specific treatment with a minimum loss of amplitude of active movement.

In this situation and based on an assessment scale published in 2001 by the “Concours Médical”, the doctor will be able to establish a partial permanent disability rate, i.e. impairment to physical and psychological integrity, which should not exceed 3%.

In the United Kingdom, only non-quantifiable injuries are taken into consideration.

In The Netherlands, the two types of injury are taken into consideration with a reversal of the onus of proof for non-quantifiable injuries.

COUNTRY	QUANTIFIABLE/NON-QUANTIFIABLE INJURIES
BE	<ul style="list-style-type: none">▪ Both types of injury are taken into account
CH	<ul style="list-style-type: none">▪ Swiss law makes no distinction: all injuries are indemnifiable. In the majority of cases, the person responsible or the state insurer is obliged to take into consideration non-quantifiable damage.
DE	<ul style="list-style-type: none">▪ Compensation based on objective assessment of the injury (presumption). Court must be convinced of the existence of a causal link
ES	<ul style="list-style-type: none">▪ Both types of injury are taken into account
FI	<ul style="list-style-type: none">▪ Both types of injury are taken into consideration

FR	<ul style="list-style-type: none"> ▪ For minor trauma, the victim may report intermittent pain triggered off by precise causes requiring specific treatment with a minimum loss of amplitude of active movement ▪ In this case, based on the 2001 “Concours Médical” assessment scale, the doctor can fix a partial permanent disability rate, i.e. impairment to physical and psychological integrity, which should not exceed 3%
IT	<ul style="list-style-type: none"> ▪ Reimbursement for non-quantifiable injuries on the recommendations of the forensic expert
NL	<ul style="list-style-type: none"> ▪ Both types of injury are taken into consideration with a reversal of the onus of proof for non-quantifiable injuries
NO	<ul style="list-style-type: none"> ▪ Both types of injury are taken into account
UK	<ul style="list-style-type: none"> ▪ Non-quantifiable injuries are taken into consideration

C. Different liability/social security approach

In Germany, the approaches differ.

In civil law, the legal qualification is important (bodily injury, fault, strict liability). For the social security bodies, prejudice remains the decisive factor.

Concerning causality, a worsening of an injury caused prior to the accident may involve liability rules. For social legislation, there must be significant injuries.

In Belgium, the social security approach is sometimes different. However, both types of injury are taken into account.

In Switzerland, from a dogmatic point of view, social security law and liability law have the same concept of natural and adequate causality.

Hence, with regard to spinal injuries, according to case-law, natural causality in the presence of a “typical clinical” table presenting the following problems is generally accepted: headaches, vertigo, loss of concentration, loss of memory, nausea, fatigue. In actual fact, this table is more of a legal than a medical construction since the symptoms envisaged may be attributed to other causes than to distortion of the cervical spine.

As far as adequate causality is concerned, case-law in state insurance refers to rules relating to psychological injuries. It accepts that causality is lacking in minor or slight accidents and allocated if the accident is serious. With regard to accidents whose gravity is average, the issue is more delicate. Objective criteria then have to be taken into account: circumstances of the accident, nature and importance of the injuries, length of medical treatment, occurrence of complications, importance and duration of sick leave.

For reasons of legal policy, this case-law may persuade a court to query adequate causality in state insurance whereas civil courts might, on the contrary, admit it. This paradoxical situation is a source of problems for liability insurers.

In Italy, MCTs are a typical liability phenomenon.

Consequently, it is excluded from workmen's compensation regulations where an excess is envisaged which may attain 6% of permanent disability.

In Finland, the approaches are, in principle, the same. Problems are dealt with similarly but the amount of compensation may vary. The production and administration of proof may be different in the social security field.

In France, there is a difference between social security and workmen's compensation regulations since a presumption of imputability of the accident exists. However, the medical approach remains the same and the doctor undertakes the same examination as in liability.

In the United Kingdom, contrary to Spain, insurance law and social security law adopt the same concepts to indemnify bodily injury.

In The Netherlands, a different approach is adopted depending on whether it is liability or social security. This difference will probably increase in future because it is difficult to obtain compensation from the social security authorities for MCT not resulting in total incapacity.

COUNTRY	LIABILITY / SOCIAL SECURITY APPROACH
BE	<ul style="list-style-type: none"> ▪ The social security approach is sometimes different. Both types of injury are however taken into account
CH	<ul style="list-style-type: none"> ▪ Social security and liability law both recognise the same concept of natural and adequate causality ▪ Case-law: natural causality in the presence of certain troubles (vertigo, loss of memory, nausea...) ▪ Case-law in the social security field: no adequate causality when slight accident ▪ Current federal tribunal jurisprudential trend: for reasons of legal policy, adequate causality may be disputed in state insurance and admissible under liability. Paradox which is worrying liability insurers
DE	<ul style="list-style-type: none"> ▪ Liability rules: important legal qualification (fault, strict liability, damage). For social security bodies, decisive element = prejudice ▪ Concerning causality: liability rules, aggravation of injury caused prior to the accident may bring into play the rules of liability. For social security legislation, there must be significant injuries
ES	<ul style="list-style-type: none"> ▪ Liability and social security approach different
FI	<ul style="list-style-type: none"> ▪ Liability and social security approaches similar but the amount of compensation may vary like production and administration of proof

COUNTRY	LIABILITY / SOCIAL SECURITY APPROACH
FR	<ul style="list-style-type: none"> ▪ Difference between liability and social security insurance in workmen's compensation where a presumption of imputability of the accident exists. However, the medical approach remains identical: the doctor does the same examination as in liability
IT	<ul style="list-style-type: none"> ▪ MCTs admitted by liability law but not by workmen's compensation legislation where an excess is envisaged which may attain 6% of permanent disability
NL	<ul style="list-style-type: none"> ▪ Different approach between liability and social security. This difference will probably increase in future because it is difficult to obtain compensation from the social security authorities for MCT not resulting in total incapacity.
NO	-
UK	<ul style="list-style-type: none"> ▪ Liability and social security approaches similar

IV. NATIONAL SURVEYS AND STUDIES ON MCT

All states which replied to the survey reported studies on the theme of MCT whether resulting from a congress organised by experts (Belgium), universities (Finland) and/or financed by insurers (Switzerland, Germany).

French insurers have published a brochure including numerical codes concerning injuries and after-effects. Medical data collected by the consultant is incorporated by the claims manager for statistical purposes on the nature of injuries (in particular spinal injuries and the after-effects arising therefrom).

COUNTRY	NATIONAL SURVEYS AND STUDIES ON MCT
BE	<ul style="list-style-type: none"> ▪ « Expertalia 2001 » Congress on 12 October 2001 organised by the « Union Professionnelle des Médecins Spécialisés dans l'Evaluation des Dommages Corporels » and the « Fédération belge des médecins conseils » (CEREDOC) on MCTs. Documents not published
CH	<ul style="list-style-type: none"> ▪ ASA + national Swiss insurance fund for Accidents and the national Swiss fund for scientific research backed a study undertaken by Bern University on possible chronic spinal trauma (Radanov study). This study demonstrates the usefulness of psychotherapeutic treatment and confirms that an MCT without a blow to the head causes no structural injury to the brain ▪ ASA and Dutch company RAND examined risk factors for chronic injury (RAND study). The results of this study have enabled a concept for managing MCT claims to be drafted by insurers ▪ ASA supports efforts intended to define quality standards for analysing the dynamics of accidents (CRASH study). See chap. III, ch. 4 above

COUNTRY	LIABILITY / SOCIAL SECURITY APPROACH
DE	<ul style="list-style-type: none"> ▪ HWS-Beschleunigungsverletzungen, HUK-Verband, Büro für Kfz-Technik, München, 1994. ▪ Comparison of different car seats regarding head-neck kinematics of volunteers during rear-end impact, IRCOBI Conference, Dublin, 1996. ▪ Neck injuries in car accidents, Büro für Kfz-Technik, München, 1996. ▪ Reported soft issue neck injuries after rear-end car collisions, IRCOBI Conference, Gothenburg, 1998. ▪ Human head neck response during low-speed rear end impacts, Stapp Conference, Phoenix, 1998. ▪ Stellenwert des EMG der Nackenmuskulatur in der Diagnostik von HWS-Beschleunigungsverletzungen, 1998. ▪ Occurrence of reported cervical spine injuries in car accidents and improved safety standards for rear-end impacts, WAD-Kongress Vancouver, 1999. ▪ Pine wire EMG of the cervical muscles in the diagnostic of whiplash injuries, abstract book of the WAD-World-Congress, Vancouver, 1999. ▪ Development of a technique for intramuscular EMG measurement of the m. semispinalis capitis and m. semispinalis cervicis, abstract book of the WAD-World-Congress, Vancouver, 1999. ▪ EMG Measurement techniques validating cervical spine distortion injuries and 3-D ultrasound analysis, University Ulm (Hartwig, Kramer). ▪ Establishing of a dynamic seat test standard, GDV German Insurance Institute for Traffic Engineering, Member of IIWPG (International Insurance Whiplash Prevention Group). ▪ European Union “Whiplash” Projekt, GDV German Insurance Institute for Traffic Engineering, Member of IIWPG (International Insurance Whiplash Prevention Group), EU DG XII Support and Funding.
ES	<ul style="list-style-type: none"> ▪ « Protocol de actuación y valoración del Síndrome del Latigazo Cervical » Barcelona 2002
FI	<ul style="list-style-type: none"> ▪ Study on MCTs undertaken by Kuopio university. Results not yet published
FR	<ul style="list-style-type: none"> ▪ French insurers published a brochure comprising numerical codes concerning injuries and after-effects ▪ Medical data collected by the consultant is incorporated by the claims handler in order to obtain statistics as correct as possible on the nature of the injuries, in particular spinal, and their after-effects
IT	<ul style="list-style-type: none"> ▪ Study undertaken on the basis of proof of collisions in order to determine the existence of a shock threshold under which it is reasonable to exclude MCT injuries
NL	<ul style="list-style-type: none"> ▪ The Insurers' Institute for Bodily Injury Claims (PIV) has undertaken, thanks to TNO (one of the largest research and technology organisations) various studies on the relationship between speed and the gravity of the injury. These studies also covered onus of proof
NO	-
UK	<ul style="list-style-type: none"> ▪ Cf. Question VI on measures taken by insurers

V. EXISTENCE OF LOBBYING GROUPS

1. Associations of MCT injury victims

Belgium, Switzerland, Germany, the Netherlands and Norway report on specialised associations for defending MCT victims.

France mentions that the theme of MCTs is monitored by associations of accident victims regardless of the nature of the after-effects.

Italy notes that the emergence of the MCT phenomenon has enabled numerous road accident agencies to be set up.

COUNTRY	ASSOCIATIONS OF MCT INJURY VICTIMS
BE	<ul style="list-style-type: none"> ▪ Development of Belgian branches of Dutch associations in certain Flemish Provinces (Limbourg and Antwerp): Justitia pro dolore and ASBL MCT
CH	<ul style="list-style-type: none"> ▪ "Schleudertrauma-Verband" association which includes lawyers and doctors supporting victims ▪ Interessengemeinschaft Sozialversicherungsgeschädigter- ISGA: interest group of social security injured persons and their relatives ▪ Swiss association for cranio-cerebral trauma for monitoring so-called "slight" cerebral trauma ▪ Local patient information services ▪ Magazines and TV programmes on consumer defence
DE	<ul style="list-style-type: none"> ▪ Zeller Kreis, Schleudertraumaverband
ES	No
FI	No
FR	<ul style="list-style-type: none"> ▪ No specific associations but theme monitored by associations of accident victims regardless of the nature of the after-effects
IT	<ul style="list-style-type: none"> ▪ No, however emergence of the phenomenon has enabled numerous road accident agencies to be created
NL	<ul style="list-style-type: none"> ▪ MCT Stichting Nederland
NO	<ul style="list-style-type: none"> ▪ A victim association exists (name not communicated)
UK	No

2. Assistance from doctors/lawyers

With the exception of Norway which did not reply on this subject, all countries in which there are victims' associations (whether or not specifically covering MCT victims) indicate that they benefit from the assistance of doctors and lawyers.

COUNTRY	ASSISTANCE FROM DOCTORS AND/OR LAWYERS
BE	<ul style="list-style-type: none"> ▪ Associations of victims assisted by Dutch lawyers and Belgian doctors
CH	<ul style="list-style-type: none"> ▪ Associations supported by an active lawyers' lobby and by doctors (split in the medical corps unfortunate for a scientific approach as well as an objective appreciation of the point of view of insurance).

COUNTRY	ASSISTANCE FROM DOCTORS AND/OR LAWYERS
DE	<ul style="list-style-type: none"> ▪ "Zeller Kreis" is assisted by doctors and lawyers
ES	Yes
FI	-
FR	<ul style="list-style-type: none"> ▪ In the framework of associations, doctors chosen by the victims are present at assessments ▪ Associations also have their own lawyers
IT	Yes
NL	<ul style="list-style-type: none"> ▪ Assistance from doctors and lawyers
NO	-
UK	-

VI. MEASURES TAKEN BY INSURERS

The replies by insurers vary depending on the markets.

For Switzerland, Germany and the United Kingdom, the measures taken by insurers are numerous and varied (financing studies, exercise material for use by emergency services or search teams, workshops).

The Netherlands mentions awareness campaigns of this type of injury for the public.

In Belgium, certain insurance companies take particular care where bodily injury accidents involve MCT.

As for France, it indicated that the detailed description of the after-effects in the "Concours Médical" scale should make it possible to halt the rise in after-effects which are not really objective of which doctors are increasingly aware.

In Italy, insurers' priority is to relaunch bio-mechanical evaluations to assess the causal link.

COUNTRY	MEASURES TAKEN BY INSURERS
BE	<ul style="list-style-type: none"> ▪ No particular measures ▪ Several companies say they are particularly careful in bodily injury accident management in which MCT injuries are involved
CH	<ul style="list-style-type: none"> ▪ Support for the three studies mentioned in question 4 and preparation of a claims management concept on MCTs ▪ Participation from 1998 in establishing postgraduate training courses for medical experts ▪ Preparation of a documentary file for initial consultation after a (benign) cranio-spinal trauma caused throughout acceleration ▪ Participation in a limited company, Activita, of insurance representatives and lawyers of injured persons whose aim is to establish interdisciplinary co-operation and synergy for the rehabilitation of patients regardless of the question of causality

COUNTRY	MEASURES TAKEN BY INSURERS
DE	<ul style="list-style-type: none"> ▪ Allianz: Cervical Spine Distorsion workshop ▪ GDV German Insurance Institute for Traffic Engineering, Member of IIWPG (International Insurance Whiplash Prevention Group): research funding. ▪ European Research Programme on MCTs
ES	<ul style="list-style-type: none"> ▪ Financial support for technical studies, congresses and seminars
FI	<ul style="list-style-type: none"> ▪ Documentation sent to researchers ▪ Organisation of a few seminars ▪ Modest financial support
FR	<ul style="list-style-type: none"> ▪ No pressure from insurers on doctors who are totally independent. ▪ However, it is possible to note a rise in after-effects which is not objective. ▪ Awareness of doctors through the press, congresses and training ▪ The detailed description of the nature of the after-effects in the "Concours Médical" scale will make it possible to halt this rise
IT	<ul style="list-style-type: none"> ▪ Relaunch of biomechanical assessments to evaluate the causal link between damage and accident. ▪ Organisation of congresses regularly with forensic scientists and justices of the peace ▪ Specialisation courses for ergonomic experts
NL	<ul style="list-style-type: none"> ▪ Awareness campaign vis-à-vis the public to prevent and better understand this type of risk
NO	<ul style="list-style-type: none"> ▪ Development of software to analyse the technical aspects of collisions and help in assessing causality
GB	<ul style="list-style-type: none"> ▪ Publication of a brochure with advice immediately after the accident ▪ Financing of exercise material for emergency hospital services so they can look after patients better ▪ Research in order to identify more upstream cases of long duration trauma-study over three years to develop a detection model which is more upstream ▪ Research to prevent long-term suffering: clinical tests over 3 years to assess the efficiency of different forms of treatment ▪ Publication by Thatcham of results on the efficiency of head-rest systems in order to reduce spinal trauma (results available on the Internet site) ▪ Some insurers use software packages (Colossus) to assist in the evaluation of bodily injury compensation

VII. CONCLUSION: RECOMMENDATIONS TO NATIONAL ASSOCIATIONS

- Clearly distinguish the role and the function of the doctor depending on whether he is a consultant or a GP. The study suggests that the objectivity of the expert's medical opinion depends on such a distinction. This objectivity is based on training for the expert in assessing bodily injury.
- Need for specialised training for medical experts. Assessment is a scientific discipline which can be taught, characterised by strict methodology which ensures its formal exactness and defines the objective quality standards useable by those responsible for settling bodily injury claims.
- Need for greater consultation between doctors, lawyers, insurers and biodynamic experts. Cervical spine injuries show the need for a multi-disciplinary approach enabling the problem to be looked at globally.
There could be misunderstanding between doctors and lawyers arising from the fact that doctors practice an empirical science whereas lawyers practice a normative one. Hence, the problem for lawyers in understanding the difficulties of doctors in diagnosing or the difficulties of doctors in understanding the legal rules on causality.
- Develop active communication on problems relating to compensation of cervical injuries (publications in medical and legal reviews, themes for legal or medical seminars, information for the general public...).
The considerable differences in claims and average cost per claim from one country to another, which all have high-level medicine and relatively similar compensation systems, show that cervical injuries are a phenomenon of society rather than a purely medico-legal problem.
- Underline the fact that technical developments associated with vehicle design are not sufficient to resolve the entire problem of cervical injury claims.

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