

THE BIOMECHANIST AS EXPERT WITNESS

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INTRODUCTION

There is a critical need for qualified Biomechanists in the areas of civil and criminal litigation. Currently few "true Biomechanists" work in this area. This has resulted in a vacuum of qualified personnel being filled by people who speak to biomechanical issues with little or no education, training, and experience in anatomy, kinesiology, physiology, research methods, statistics and other areas that constitute the discipline of Biomechanics. The result is that legal decisions are made based upon incorrect or inadequate information.

We suggest that as professional Biomechanists we may have a responsibility to enter this area or in our absence abdicate our role to less qualified individuals. If we as a discipline do engage this role we will upgrade the quality and truthfulness of at least a portion of the litigation process.

ROLES OF THE EXPERT

The major role of the expert is at trial and that is to educate the jury and the court (judge) in those areas of special knowledge in which the expert is uniquely qualified. The expert witness is an invaluable aid in cases in which the facts require some scientific explanation. The expert must be knowledgeable of the specific issues of the case, render an opinion on those issues, and effectively communicate this information to the jury.

Prior to this final role at trial, the expert can assist the attorney in earlier portions of the litigation process by:

- 1) identifying the issues that need to be examined,
- 2) determining what issues need to be explained and clarified by the expert or other experts,
- 3) conducting, directing or coordinating any tests and evaluations that may be necessary,
- 4) identifying defects in the case,
- 5) assisting in the discovery process by:
 - a) helping prepare questions to interrogatories,
 - b) helping prepare answers to interrogatories,
 - c) helping prepare questions for the depositions of the plaintiff, defendant, and witnesses,
 - d) helping prepare questions for the depositions of other experts,
- 6) providing testimony as to the custom, practice and standards of the industry.

PREPARATION

Before the taking of an expert's deposition and trial, the expert will be required to do a substantial amount of preparation. In deposition and in trial an expert will be asked "What are your opinions?" and "What are the basis for those opinions?" An expert's opinion is only as good as the foundational material that is provided to you. To do a competent job the expert must have all the facts and evidence available for consideration.

All of the relevant discovery material should be provided by the attorney and typically would include:

- 1) interrogatories; questions and responses of both plaintiff and defendant,
- 2) photos, diagrams, reports, witness statement and the like if they exist,
- 3) pertinent medical records,
- 4) depositions of the plaintiffs, defendants and witnesses,
- 5) deposition of other experts.

The expert should request a complete set of this material and sufficient time to review such. The expert should be familiar with the contents of all this material and be aware of the contentions of each party and be able to address the pertinent issues.

Upon completion of the initial review the expert should examine any readings, research, reports or other material helpful in developing an opinion. The expert may also be called upon to educate the attorney as to the scientific issues of the case. This will enable the attorney to have a sufficient understanding so as to be able to cope with any conflicting and contradictory evidence. The expert may also need to examine or evaluate the plaintiff, perform a site inspection and/or conduct or coordinate tests in order to formulate an opinion.

It is of no help and in fact counterproductive for an expert to tailor an opinion to support the attorney who has hired the expert. The attorney is best served if the expert provides conclusions and opinions based upon cold hard facts. The expert should not be an advocate for one side in the litigation but rather desirous of presenting the truth in the matter. The expert's final opinion should be clear and defensible.

TESTIMONY

Upon completion of adequate preparation, the expert will be asked to give testimony, under oath, in deposition and in trial as to the conclusions and opinions that have been reached. The ultimate goal of the expert is to assist the jury in understanding the issues and intricacies of the case. The expert by virtue of knowledge and experience in the area of expertise educates the jury as to the facts, inferences, conclusions and opinions that are reached. The expert then assists the jury in reaching their ultimate opinion.

Juries are comprised of the "people next door". They have an average education and an average income. They have average experience and common sense. In virtually all circumstances they are particularly impressed by the oath that they take and the formality of the proceedings. They want very much to do a good and honest job in the service of their community. These are essential and important matters to the jurors and it must be the same for the expert.

In the interests of being well-understood it is often recommended to tell the jury what you're going to tell them, tell them what you intend to tell them and tell them what you told them. A good trial lawyer will illicit from the expert witness a summary of the subjects to be covered in the witness's testimony which will be followed by in depth

questioning of each element of the testimony. Finally the lawyer will seek a summary of what has been said.

It is vitally important that the expert witness listen carefully to the questions of the lawyer who is calling the witness. The attorney who calls the witness is only allowed to "direct" the witness which means that the questions must be open and not suggestive. The opposing attorney will be permitted to "lead the witness". These questions by the cross-examiner may be answerable by "yes" or "no" or "I cannot be confined to such a limitation in answering the question the way you have framed it". This last answer is permissible. If the question is couched in such language that you cannot answer with a simple yes or no do not attempt to answer it until it has been phrased so that it can be answered to your satisfaction.

Under cross-examination listen carefully to be certain that you understand the question. Experts are often required to answer hypothetical questions, particularly during depositions and during cross-examination in trial. It is imperative that the expert understand each fact to be assumed in the hypothetical question before giving a hypothetical answer. Refuse to accept a hypothetical for which there is no factual basis. Insist that an altered fact cannot be supported by the evidence.

The following is a general outline of an expert's testimony:

1) Direct Examination: this is conducted by the attorney with which the expert has been retained and covers the following:

a) Your Qualifications

Current profession/occupation/job

Education Professional Experience

Special studies or experience in similar cases

b) Your Investigation

When were you first contacted - by whom

Materials reviewed - interrogatories and answers, accident reports, medical records, depositions, etc.

c) Your Opinion and Basis for Your Opinion

2) Cross-Examination: the questions by the opposing attorney often focus on secondary issues and any facts that are in contention. An expert must make sure that there is no misinterpretation of his testimony or of the prior testimony of other witnesses. The expert must listen carefully!

3) Re-Direct Examination: this provides an opportunity for the direct examination attorney to ask the expert questions to re-examine or clarify answers provided in cross-examination.

DEVELOPMENT OF SAFETY STANDARDS

During deposition or trial an expert may be called upon to speak to the custom, practice and standards of an industry particularly as they relate to safety standards. The development of safety standards for sport equipment, sports protective equipment, exercise equipment, sport and playground surfaces and facilities for sport and recreation has escalated in the past two decades. These standards may be efforts of governmental agencies, e.g. Consumer Product Safety Commission (CPSC), consensus groups, e.g., American Standards for Testing and Materials (ASTM), or special testing groups, e.g. NOCSAE and SNELL. Major nations have at least one standards organization and the International Standards Organization (ISO) seeks to bridge the variability between nations by establishing standards that are universal for international competition and

use.

Although membership of each standards group is varied, most organizations have representatives who are producers and manufacturers, users, engineers, testing laboratory personnel, health services professionals and research scientists. Biomechanists typically fall in the last category although some work directly with research and development teams of a given producer or manufacturer and thus represent that special interest.

The ASTM F08 Technical Committee on Sports Equipment and Facilities serves as a source of most of the examples presented. That group has about 25 subcommittees and task groups working on new standards and revising old ones. A standard which has been approved must be reviewed every five years for reapproval, revision or deletion. Current standards include:

Helmets (bicycle, equestrian, football and ice hockey)

Mouthguards Equipment Standards (archery, exercise bicycles, skate blades, trampolines)

Footwear

Playground Surfaces

Pole vault pits

Ski bindings and equipment - alpine and nordic

Wrestling mats

as well as various test methods for impact, abrasion, etc. Standards under development include golf clubs, artificial turf, natural turf, baseball/softball fields, sports bras, fencing protection, and ice hockey facilities. In addition to standards development ASTM holds symposia and workshops on important topics. Recent topics include: Ice Hockey Safety, Skiing Safety, Head and Neck Injury, and Aerobic Dance Injury. Official meetings in the spring and fall finalize work completed by task groups who meet between meetings to draft standards.

Biomechanists are encouraged to become part of the safety standards development. They are strong contributors during the development process because of their sport and exercise background as well as their understanding of kinematics and kinetics. They benefit, too, from the educational experience provided through interaction with producers and professionals. As experts knowledge of the scope, procedures and contents of such standards can be invaluable in giving testimony.

PRESENTATION

An expert should always be well-dressed as is appropriate for the seriousness of the litigation process. Hold yourself with dignity and self-respect and in all circumstances be courteous. Never allow yourself to lose your temper with an examiner or most importantly with the judge. Treat each question with respect and try your best to answer it to your best ability.

If you make a mis-statement in your testimony and want to correct it, do so. If the judge tells you that you must wait for a question, your lawyer will bring it out when the time is appropriate. Do not be afraid to be human, but do be an expert in the pursuit of truth, not a party in pursuit of damages. Finally, remember that jurors are free to walk through the courthouse and therefore you will be observed under all circumstances. Try to project a professional image throughout your presence at the courthouse.

If you have an opportunity to testify as an expert, we hope you will consider taking on the responsibility because you are needed!