

Author's Response

Sir,

We appreciate the interest that Strote has in our article (1). He criticizes our article because it did not include acidosis as a possible pathophysiological effect of conducted electrical weapons (CEWs). Apart from the fact that acidosis is indeed listed in our article ("Certain potential risk factors, such as acidosis...") (1), possible effects of CEWs on the respiratory and metabolic system have widely been discussed in the past (2–4). However, no clinically relevant changes could be verified in human studies (5–8). Because of this and due to the fact that acidosis is just one of many frequently discussed theories of TASER-related deaths, our main perspective lied within more relevant health aspects (e.g., effects on the cardiovascular system or mechanical injuries), which are currently discussed among different research groups (9,10).

Dr. Strote makes a valid point that we did not mention certain disparities between the studies cited and what might occur in the field. It is therefore important to point out that most TASER studies are performed in an ideal environment with limited additional variables, such as stimulant use or inadequate dart positioning. However, there are very limited studies that examine the influence of drugs and alcohol on CEWs (11,12). Furthermore, because the majority of these studies are animal based, their results cannot simply be transferred to humans (13,14). To our knowledge, there is only one human study by Moscati et al. (15), which claims that alcohol intoxication has no influence on possible metabolic acidosis during or after an exposure to CEWs. But not only the influence of drugs or alcohol is a very important variable that should be taken into account, but also field expectations and discrete physiologic observation of the effectiveness of human incapacitation by CEWs. A recently published study by Ho et al. (16) shows these multifaceted mechanisms by which CEWs cause their effects in humans.

Dr. Strote questions one of our conclusions and states that recent studies claim a direct correlation of causality between CEWs and death. It is a well-known fact that in research articles, the conclusion represents the authors' subjective evaluation of the data and can be stressed in various ways. Therefore, we based our conclusions not on individual studies and one Federal Court verdict, but on the majority of literature available on this subject. We acknowledge the fact that we did not mention these two articles before, but are still confident in our conclusion.

Dr. Strote's final point that most of the paper's references come from researchers who are financially associated with TASER International is not comprehensible from our point of view. In our article, we attached great importance to a balanced presentation of different opinions on the matter, which reflects in our reference list. Furthermore, the cited article by Azadani et al. (17) has already been criticized by Vilke et al. (18) as well as Kunz (19), and the main aspects and limitations of their article have been discussed by Azadani et al. (20) in their response letter.

Finally, we agree with Dr. Strote that scientific valuable conclusions can only be drawn after a complete analysis of current scientific literature and that any publication should fulfill these requirements.

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