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|  | Our tests were inadequate for a complete analysis of pool safety; they only accounted for a simple measure of it. For more involved testing, we decided the following steps should be considered:   * **More pools and more tests:** if we expand our number of trials and subjects, then we will achieve a better representation of overall pool conditions. The data that we collected came from only six pools around Pleasanton, so the conclusions that we made could be greatly affected by variations in one or two pools. Also, because the tests were done using a color comparator, readings were subjective; repeated testing would likely reduce error due to this fact. * **Test during the summer:** Pool care is critical during the summer because that is when they get the most use, and when safety is the most important. The number of swimmers vastly influences the conditions of a pool, such as the amount of organic matter, bacteria, and body oils. This, in turn, will affect the levels of chlorine and pH. The higher temperatures of summer will also have a considerable impact on pool conditions. Temperatures above 80 degrees Fahrenheit will encourage algae and bacteria growth. * **Conduct surveys:** While we did in fact leave surveys for pool caretakers to respond to, very few of them were completed. The difficulty in conducting a survey was that there was no way to contact the caretaker to check that he/she received it and was knowledgeable enough to fill it out. But the information provided by a survey is necessary in constructing an accurate picture of a pool's safety. Factors such as the frequency of testing, number of swimmers, and safety history should all be considered in forming conclusions. * **Focus on health-related effects:** Our experiments only accounted for the potential of a pool to cause harm to swimmers. We did not investigate the actual effects that these conditions would have on swimmers. Such a study would require extensive research into each pools' history of health complaints, if there are such records, along with more detailed information about the types of harmful bacteria and algae that could survive in pools. But one possibility for an experiment could be to test the long-term effects of pool water on human hair, which was the source of the idea for this project. * **Experiment with excessive chemical levels:** Our conclusions about excessive levels of pH, alkalinity, and chlorine were all based on research. A controlled experiment could be performed where the chemical levels are varied and the differences observed. The experiment on human hair could easily fit such a procedure. * **Identify bacteria:** We performed our bacteria experiment with the assumption that any bacterial growth was potentially hazardous. While this is a possibility, not all bacteria are harmful to the body. Our bodies are covered with millions of harmless bacteria, and it likely that the bacteria that we were able to culture posed no threat to swimmers' health. This would be an important consideration to make in a detailed study of pool safety. * **Repeat bacteria cultures:** We encountered problems trying to grow bacteria on agar plates. The agar would melt back to its liquid state in the autoclave, perhaps due to the heat and accumulated condensation. We were only able to repeat the process twice, and neither attempt was totally successful. Multiple trials would yield more substantial results. * **Test available chlorine:** Our test of chlorine using orthotolodine was a method of measuring all forms of chlorine, including the combined chloramines. Chloramines are thirty to forty times less effective than free available chlorine. Therefore, it is much more important that free available chlorine levels be tested rather than all forms of chlorine. * **Test spas:** We concluded that pools are generally free of harmful bacteria and matter. Our experiment can be extended to include spas, which are potentially much more dangerous. Because of the high temperatures maintained in spas, bacteria growth can be much more significant. The maintenance of spas is therefore more demanding and more significant in the safety of swimmers. * **Obtain dependable access:** Some of our testing required that we find "alternative entrances" to pools. This proved to be a great inconvenience, since we were not always able to test the pools when we wanted. To perform our experiment, we highly recommend that test locations are easily accessible. |

*This Web Site is Best viewed with 256 or more colors.*

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