Tourniquets Pressure and Fist Pumping

Laboratory test results can be falsely elevated or decreased if the tourniquet pressure is too tight or is maintained too long. The pressure from the tourniquet cause biological analytes to leak from the tissue cells into the blood, or vice versa. For Example, plasma cholesterol, iron, lipid, protein, and potassium levels will be falsely elevated if the tourniquet pressure is too tight or prolonged. Significant elevations may be seen with as short as a 3-minute application of the tourniquet. In addition, some enzyme levels can be falsely elevated or decreased because of tourniquet pressure that is too tight or prolonged. Also, pumping the fist before venipuncture should be avoided because it leads to an increase in the plasma potassium, lactate, and phosphate concentrations.

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Garza, Diana & Becan-McBride, Kathleen, Phlebotomy Handbook 6th Edition. Pp 292&293 Prentice Hill, NJ. 2002