Supplementary Online Content

McCarty JC, Hashmi ZG, Herrera-Escobar JP, et al. Effectiveness of the American College of Surgeons Bleeding Control Basic Training among laypeople applying different tourniquet types: a randomized clinical trial. *JAMA Surg.* Published online July 24, 2019. doi:10.1001/jamasurg.2019.2275

This supplementary material has been provided by the authors to give readers additional information about their work.

eMethods. Description of Tourniquets

- Combat Application Tourniquet (CAT):
    - Description: Windlass-based tourniquet which uses a Velcro strap with an omnidirectional open plastic clip for windlass placement.
    - Assessment of participant understanding: Determined by whether the participant applied sufficient pre-tensioning to the tourniquet followed by twisting and securing of the windlass.
- Special Operations Forces Tactical Tourniquet (SOF-TT):
    - Description: Windlass-based tourniquet which uses a buckle mechanism for the strap and a metal closed triangle clip for windlass locking.
    - Assessment of participant understanding: Determined by whether the participant applied sufficient pre-tensioning to the tourniquet followed by twisting and securing of the windlass.
- Stretch-Wrap-and-Tuck-Tourniquet (SWAT-T):
    - Description: Elastic tourniquet which is a wide rubber elastic band which is meant to be applied by sequentially wrapping around the affected extremity and then tucked under itself to keep it in place. It has instructions printed on the tourniquet itself describing the basic steps for how to apply the tourniquet. Significant tension must be maintained throughout the application process to correctly apply the tourniquet.
    - Assessment of participant understanding: Determined by whether the participant wrapped the tourniquet around the leg multiple times while maintaining tension and tucked it under itself in the manner intended by the manufacturer.
    - Unique For the SWAT-T, instructors assessed whether the instructions printed on the tourniquet were read by the participant; this data was recorded for only the final 57 participants after it was noted a large portion did not.
- Rapid Application Tourniquet System (RATS):
    - Description: Elastic tourniquet which is similar to a bungie-cord in design with a metal locking mechanism to hold it in place after sequential wrapping around the affected extremity. Significant tension must be maintained throughout the application process to correctly apply the tourniquet.
    - Assessment of participant understanding: Determined by whether the participant tried to wrap the tourniquet around the leg multiple times while maintaining tension and then locking it in place using the metal clasp.
- Improvised Tourniquet:
    - Description: Participants provided windlass, belt, shoelace, 6 foot gauze wrap.
    - Assessment of participant understanding: Determined by whether participant attempted to use the windlass to develop sufficient tension.

eTable 1. Multiple Logistic Regression Output Assessing Demographic Predictors for Correct Tourniquet Application

The below models should be viewed with caution as there were few outcomes for multiple tourniquets compared to the number of predictors included in the model specified to be included *a priori*. This results in wide confidence intervals making interpretation difficult. This model treated order of application as an ordinal variable as there were numbers that either had zero outcomes or perfectly predicted the outcome causing them to drop out of the model. These models do not account for multiple testing.

	CAT (OR, 95% CI, p-value)	**SOF-TT**	**SWAT-T**	**RATS**	**Improvised Tourniquet**
Age (ref: Young adult 18-34)	ref	ref	ref	ref	ref
Middle-Aged Adult (35-55 yo)	1.33 (0.20, 8.77), p=0.76	0.79 (0.27, 2.30), p=0.66	0.61 (0.13, 2.85), p=0.53	1.30 (0.29, 5.75), p=0.73	2.14 (0.76, 6.04), p=0.15
Older Adult (>55 yo)	0.43 (0.07, 2.83), p=0.38	0.25, (0.08, 0.85), p=0.03	1.04 (0.20, 5.43), p=0.96	1.48 (0.27, 8.19), p=0.65	2.96 (0.89, 9.85), p=0.08
Gender (ref: Female)	1.30 (0.26, 6.45), p=0.75	1.23 (0.48, 3.17), p=0.67	2.93 (0.67, 12.92), p=0.16	7.11 (1.32, 38.1), p=0.02	1.17 (0.46, 2.95), p=0.74
Education (ref: high School graduate or less)	0.69 (0.12, 4.06), p=0.68	2.18 (0.82, 5.78), p=0.12	0.45 (0.12, 1.69), p=0.24	1.24 (0.31, 4.91), p=0.76	1.13 (0.43, 2.99), p=0.81
Self-reported prior training (ref: No prior training)	ref	ref	ref	ref	ref
First-Aid Training only	1.33 (0.26, 6.90), p=0.73	1.49 (0.53, 4.24)	0.76 (0.16, 3.69), p=0.73	1.60 (0.30, 8.40), p=0.58	0.53 (0.19, 1.48), p=0.22
First-Aid + Hemorrhage Control Training	3.33 (0.31, 35.72), p=0.32	3.32 (0.91, 12.06), p=0.07	1.06 (0.22, 5.02), p=0.94	2.85 (0.54, 15.2), p=0.22	0.53 (0.16, 1.76), p=0.30
Order of Tourniquet Application (Ordinal sequence)	1.03 (0.60, 1.78), p=0.90	0.81 (0.59, 1.12), p=0.20	1.17 (0.74, 1.86), p=0.51	0.91 (0.55, 1.49), p=0.70	0.75 (0.55, 1.02), p=0.07

eTable 2. Result of Sequence Randomization

order	CAT	SOF-TT	SWAT	RAT	Improvised Tourniquet
1	22 (21.6%)	21 (20.6%)	25 (24.5%)	18 (17.7%)	16 (15.7%)
2	20 (19.6%)	19 (18.6%)	16 (15.7%)	22 (21.6%)	24 (23.5%)
3	18 (17.7%)	23 (22.6%)	24 (23.5%)	21 (20.6%)	17 (16.7%)
4	27 (26.5%)	17 (16.7%)	20 (19.6%)	18 (17.7%)	20 (19.6%)
5	15 (14.7%)	22 (21.6%)	17 (16.7%)	23 (22.6%)	25 (24.5%)

Order of tourniquet application within 5% for each cell except for the CAT which in cell 4 and 5. Bivariable logistic regression for correct application of each tourniquet type and order sequence as an ordinal variable showed no significant effect for each order of application for each of the five models ($p>0.05$).

eFigure. Pictures of Broken PVC Pipe and Leather Belt