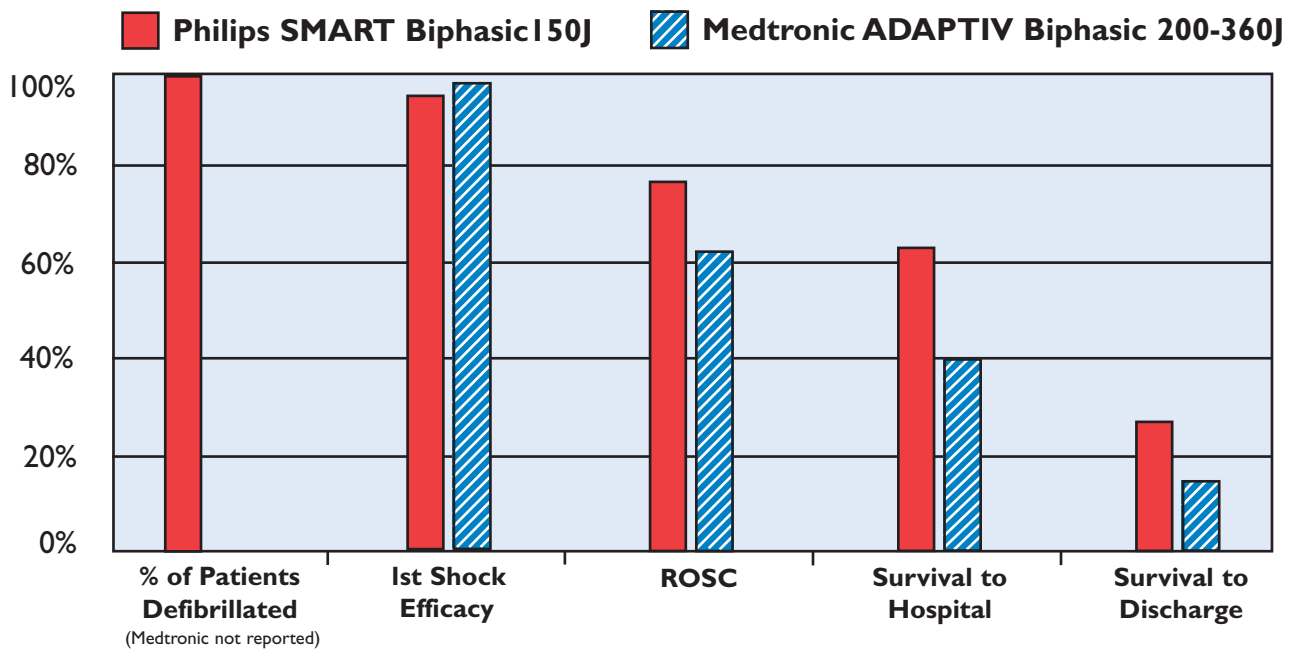


A summary of randomized out-of-hospital biphasic defibrillation trials

Two randomized, controlled, clinical trials utilizing biphasic defibrillation waveforms have now been published in peer-reviewed literature.^{1,2} The two studies were of similar size, design, and purpose. The studies were conducted in different European centers, were not concurrent, and used different monophasic controls. This brochure summarizes the biphasic results from these trials.



Observations

- The 200-360J ADAPTIV biphasic study data demonstrate no advantage over previously published study data for 150J SMART biphasic shocks.
- Observed values of all response characteristics favored the Medtronic ADAPTIV study, with lower average patient weight, shorter call-to-shock time, higher percent of witnessed arrest, and higher percent of bystander CPR, but no clinical advantage in outcome was demonstrated.

1. Schneider T, Martens PR, Paschen H, et al. Multicenter, randomized, controlled trial of 150-J biphasic shocks compared with 200- to 360-J monophasic shocks in the resuscitation of out-of-hospital cardiac arrest victims. *Circulation* 2000; 102:1780-7.

2. Van Alem AP, Chapman FW, Lank P, et al. A prospective, randomized and blinded comparison of first shock success of monophasic and biphasic waveforms in out-of-hospital cardiac arrest. *Resuscitation* 58 (2003) 17-24

Study Characteristics

	Study type	Location	Initial response	Follow-up response
SMART Biphasic 150J	<ul style="list-style-type: none"> • Randomized • Multi-center • Data reviewed by independent data safety and monitoring board 	Europe	Randomized to monophasic or biphasic AEDs with BLS care	ACLS responders with manual monophasic defibrillators
ADAPTIV Biphasic 200-360J	<ul style="list-style-type: none"> • Randomized • Single-center • Double-blinded 	Europe	Randomized to monophasic or biphasic AEDs with BLS care	ACLS responders with manual monophasic or biphasic defibrillators

Summary of biphasic patient characteristics

	Number of biphasic VF patients	Average weight, kg	Witnessed arrest, %	Bystander CPR, %	Call to first shock time, min
SMART Biphasic 150J	54	85	89%	46%	9.2
ADAPTIV Biphasic 200-360J	51	81	96%	51%	8

Summary of biphasic outcome variables common to both studies

	Termination of VF at 5s after first shock	% of Patients Defibrillated	Return of spontaneous circulation	Survival to hospital admission	Survival to hospital discharge
SMART Biphasic 150J (n=54)	96%	100%	76%	61%	28%
ADAPTIV Biphasic 200-360J (n=51)	98%	Not Reported	61%	40%	14%

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