As told before I would like to talk about teaching CPR at schools. I checked a lot of articles about this issue and first I’d like to talk about what I found and then hear what you got to say about this matter.

Sudden cardiac arrest (SCA) is a leading cause of death in Europe, affecting about 700,000 individuals a year (about 1/20000 -1/250000 out hospitalised people) Many victims of SCA can survive if bystanders act immediately while VF is still present (within the 2-3 minutes), but successful resuscitation is unlikely once the rhythm has deteriorated to asystole. The optimum treatment for VF cardiac arrest is immediate bystander CPR (combined chest compression and rescue breathing) plus electrical defibrillation. Cardiopulmonary resuscitation (CPR) skills are not widespread and, given that 70% of arrests take place at home, the majority of people do not receive basic life support (BLS) prior to the arrival of the emergency services. The time between arrest and the onset of CPR is directly related to overall survival and ideally CPR should be initiated within 4 min of arrest to achieve conscious survival. The American Heart Association suggests that morbidity and mortality of out-of-hospital cardiac arrest could be significantly decreased if 20% of the population were able to perform CPR. Also according to Keim et al. Efforts to engage older adults in CPR training have been discouraging. Concluding the question is risen: Should we train CPR at schools? And if yes at what age?

In 1996 in Hampshire, UK about 26% (55/210) of the schools trained their students CPR. The schools that provided this training had significantly more students (566 vs. 263, mean). The age at which BLS training is first provided is presented below.
As shown the mean age at which CPR training started was 10-14 years. In New Zealand a country with an incidence of out-of-hospital cardiac arrest of approximately one in two thousand per annum, the majority of primary schools are not teaching CPR skills, or other life-saving first aid, and that the majority of secondary schools are treating these subjects as optional, taught only to a small proportion of students. Although in 1999 the New Zealand Ministry of Education introduced a new Health and Physical Education curriculum for New Zealand schools, starting from preliminary school (ages 5-10). In particular, of primary schools 37.5% taught resuscitation skills during 2001, as did 81% of secondary schools. In secondary schools, resuscitation was most commonly taught during year 12 (pupil age 16–17 years), but then only as an elective subject to 10–30% of students. The most significant barriers, according to the faculty, to resuscitation teaching were identified as funding, an overfull curriculum and, in primary schools, the question of the suitability of teaching resuscitation to young children.

In urban and suburban public high schools in the Seattle, Washington region, during the 2003—2004 school year, Reder et al. tried to compare 3 teaching models. 1) The interactive computer session only group spent one class period (about 45 min) using the computer program Protest the Silence, produced by the National Center for Early Defibrillation. 2) The interactive computer session plus practice group spent one class period using the same computer program. 3) The video plus demonstration plus practice group included one class period spent watching an instructional video. 4) Control group received no training at all. The target schools were schools that trained less than 20% of their students in CPR or AED use and the students were at the 9th -12th grade (15-18 years old) with the total of 784 students. The initial results (2 days after training) were compared with the follow-up evaluation (2 months later). Concluding the authors are suggesting Computer-based CPR and AED training for high school students is appealing because it requires little classroom time (about 45 min), and does not require the classroom teacher to take time to be trained in CPR and AED instruction or to prepare to teach students CPR and AED knowledge and skills and found evidence that interactive computer based self-instruction alone was sufficient to teach CPR and AED knowledge, and AED key actions to high school students. A short (45 minute) session was enough to retain knowledge for a 2 month period of time. They also pointed out that All the three trained groups still achieved better compression results than control students, but the superiority of the two practice groups compared with training without practice largely disappeared. No group performed more than 23% of compressions successfully.(Which I personally take for a shortfall)

In 2006 the “ABC for life”-programme started in Northern Ireland, a country with one of the highest incidences of heart disease in the world. This programme had a pyramidal system of training listed below.

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As seen, each medical student instructs small groups of teachers in BLS (ratio 1:5, respectively) who then teach the pupils in their schools using small group training sessions. Repetition of this process at both levels results in large numbers of children being trained in CPR skills over a relatively short time period. The whole programme was based on 3 conditions. 

1. The training session must be taught at a level suitable for 10—12-year-old children so that they are able to understand the process, practice the skills and perform effective CPR.

2. There must be successful transfer of skills along the teaching chain from medical student to pupil.

3. There must be a structure for ongoing or regular retraining to prevent decline in the psychomotor skills necessary for effective CPR.

A short MCQ (22 questions) test was given to the pupils prior to their training, immediately after and a follow up 6 months later. The same procedure was given to a control group. The mean score of the test was:

![Graph showing the comparison of CPR and Control groups before and after training, with a decline in scores for the CPR group over 6 months.](image)

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Concluding the authors said that The ‘ABC for life’ programme has the potential to introduce widespread basic life support skills in the population. This has the impact of improving knowledge of CPR and changing attitudes towards performing CPR in real life situations, and has the potential to have long-term health benefits for the population. This study demonstrates that using our training methods 10—12-year-old children acquire basic life support skills. By using a ‘peer-training’ model with medical students and teachers, a large number of children can be trained in a short time period and at relatively low cost. 11

And last but not least, answering the question at what age can schoolchildren provide effective chest compression, a study performed in the UK evolving 157 children aged 9-14 years in three school year groups (ages 9-10, 11-12, and 13-14) showed that the children’s ability to achieve an adequate depth of chest compression depended on their age and weight. None of the children aged 9-10 years and only 19% of those aged 11-12 were strong enough to compress the chest to an adequate depth in simulated cardiopulmonary resuscitation on an adult size manikin. However, 45% of those aged 13-14 provided adequate compression depth, a similar success rate to that achieved by adults tested in comparable studies. 12

Concluding from all this I would say that teaching effective CPR at schools should mandatory at all countries but after the age of 12-13 years. Often re-training (each year) should be considered. I personally find that the “ABC for life” – program is the most affective way to teach CPR and in generally change the students attitude towards it.

I would really like to hear your opinions and experience with this matter. Do not be shy. Waiting for your posts – comments

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Reference