

## Atraumatic Restorative

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### Introduction

The **Atraumatic Restorative** Treatment (ART) is a procedure based on removing carious tooth tissues using hand instruments alone and restoring the cavity with an adhesive restorative material. At present the restorative material is glass-ionomer. This procedure has been developed because millions of people in less-industrialized countries and certain special groups such as refugees and people living in deprived communities are unable to obtain restorative dental care. Their teeth gradually decay until extraction is the only treatment option. These people have not benefited from the developments that have brought about improved oral health and care in the industrialized world. The absence of electricity and the idea that restorative dental care always requires special electrically driven equipment are the main reasons for this situation. In contrast, the ART approach enables treatment of cavities in teeth to be provided for people residing in areas where electricity is not available or, alternatively, in areas which have electricity, but where the community cannot afford expensive dental equipment.

Glass-ionomers are very useful dental restorative materials. In addition to its use as a restorative material, glass-ionomers can be applied in the very early stages of caries development. The glass-ionomer sticks to the tooth and halts or slows the progression of lesions, mainly because it slowly releases fluoride.

ART is, however, just one component of oral health care which must start with health promoting messages about a prudent diet and good oral hygiene using a fluoride containing toothpaste. Sealing pits and grooves in the chewing surfaces of teeth is another preventive action to consider. Removing carious tooth tissue with hand instruments alone, and restoring the cavity with an adhesive material - that is ART - will conserve as much tooth structure as possible and prevent further decay. This approach is a breakthrough towards achieving the goal that all people should retain as many teeth as possible: "Teeth for life".

### **ART provides care for decayed teeth, which is non-threatening, low cost, and can prevent extractions in most cases.**

Oral care workers are now able to carry all the necessary equipment, instruments and materials for providing oral care in a handbag, and travel easily by bus or bicycle. In addition, they will also be able to educate people about good and bad oral health habits and healthy behaviour. Oral health care workers in the field who make use of ART will appreciate the very positive advantages that this approach offers for saving teeth from decay. This will provide them with greater job satisfaction and communities will be better motivated towards oral health.

Furthermore, in the industrialized world, there are also many applications where ART is appropriate. ART is based on modern knowledge about minimal intervention, minimal invasion and minimal cavity preparation for carious lesions. Because it is such a friendly procedure, there are great potentials for its use in children as well as in fearful adults. It also provides a restorative option for special groups in the community, such as the physically or mentally handicapped, people living in nursing homes and the home-bound elderly.

Atraumatic Restorative Treatment was pioneered in the mid 1980s in Tanzania. In 1991, a community field trial started in Thailand, comparing ART with traditional treatment using portable dental drilling equipment and amalgam. Based on the experiences gained in Thailand, another community field trial was set up in Zimbabwe in 1993. The results of the latter study has shown that through the careful application of ART, about 85% of one-surface restorations in the permanent dentition will be in a good to acceptable condition after 3 years. The studies in Thailand and Zimbabwe, and also another community field trial, which started in 1995 in Pakistan, have clearly shown that pain is rarely experienced with this approach. In fact, if applied correctly ART is well received by the vast majority of patients.

**In conclusion, ART is quality treatment applicable to all communities.**

The results of the longitudinal studies and the practical experience gained in applying ART over the last five years have convinced us of the need for a revised edition of the ART Manual. This new manual contains instructions for the treatment of caries in both the early stage and when it has progressed into a cavity. It is principally meant for those who have limited experience in oral care procedures. A number of chapters will be very useful for qualified dental workers. However, the manual is not a self-instruction guide. Rather, those people who intend to use ART are advised to follow an ART training course first before using the approach in the field and clinic. This manual will assist them both in the training course and later in the field and clinic.

**We must emphasize that ART should be considered as part of a total package of oral health care that is based on a philosophy of promoting health and preventing diseases.**

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