# LETTERS FROM OUR READERS

**To: Editor, *The Angle Orthodontist***

**Re: Perception of Facial Esthetics: A Comparison of Similar Class II Cases Treated with Attempted Growth Modification or Later Orthognathic Surgery. *Angle Orthod.* 2003;73:365–373.**

I found Dr. Shell's article in last month's journal of great interest. It is wonderful to see increased concern for the facial esthetics of our patients and for this concern to be reflected in the literature. I am concerned, however, with the general conclusion that the esthetic outcomes of orthognathic surgery and functional appliance patients are equally favorable.

In Class II division I patients, the most obvious facial imbalance exists in the mandible, which commonly leads the surgeon to operate on the mandible alone. This is nicely evidenced by the 23 of 32 patients who had mandible-only surgery. The problem is that many Class II patients have some degree of maxillary skeletal hypoplasia. In addition, this hypoplasia is often worsened by early orthodontic attempts at class II correction using premolar extraction or maxillary functional appliances. While treating the lower jaw to an esthetic norm will produce overall esthetic improvement, it will often unmask the deficiency of the maxilla and rob the patient of a better result.

Those patients represented in the article as having a favorable esthetic outcome all possessed great upper lip projection and attractive midfaces before and after intervention. Those described as having an unfavorable esthetic outcome have retracted upper lips, obtuse nasolabial angles and poor midface projections. Patient AG, in fact, shows well how maxillary functional therapy led to esthetic decline, with a complete loss of her upper lip support and projection. Mandible-only surgery would not have provided much improvement either. Her profile would have benefited from maxillary advancement for lip support and occlusal plane leveling and mandibular advancement for lower chin projection.

I am sure that if the surgically treated group had undergone soft tissue cephalometric analysis with treatment planning for the face and the bite, the study's conclusions might have been somewhat different.

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**Response from Drs Shell and Woods:**

Thank you for providing the opportunity to respond to the letter sent by Dr Michael Gunson regarding the above article (*Angle Orthod.* 2003;73:365–373). We certainly agree with much of Dr Gunson's comment and share his enthusiasm for an increased discussion of facial esthetics in the literature. Dr. Gunson was apparently concerned that we had made the general conclusion that the esthetic outcomes of orthognathic surgery and functional appliance treatment are equally favorable. As far as we can tell, we have not made such an absolute statement. Instead, our position is well-presented with the following quote from page 370 of the article:

> *It seems that if a Class II division 1 patient presents early enough for some sort of attempted growth modification treatment, it* may *be possible for the esthetic outcome of that treatment to be just as favorable as if that patient were to be treated later at the end of the growth phase by orthognathic surgery. However, only average findings have been reported in this study, and many clinical and cephalometric factors need to be considered when planning treatment for each individual Class II patient. It may, for instance, be reasonable to provide some form of attempted growth modification treatment for those patients, in whom there is doubt about the ultimate choice of treatment method, knowing that in not all patients will such attempted growth modification be successful. In these cases, patients may have to receive treatment later in the form of orthodontics combined with orthognathic surgery. The need for such treatment later perhaps should not be seen as a failure, but more as recognition of the wide range of individual responses to any form of orthodontic or orthopedic treatment.*

We also stand by the conclusion that ''Perceived esthetic outcomes in *many (not all)* Class II division 1 patients seem to be just as favorable whether they have been managed earlier during the useful growth phase or later, at the completion of growth by orthognathic surgery.''

We agree with Dr Gunson's observation that the facial photographs of the patients deemed to have been unfavorably treated highlight the fact that some sort of formal soft tissue analysis should be a critical component of any orthodontic planning exercise. We have, however, been honest in presenting the worst cases from each of the surgery

and attempted growth modification groups. There is no doubt that both the surgery case (SM) and the growth modification case (AG) may well have been more favorably treated with different means. Having said that, we stand by the fact that functional appliance/fixed appliance treatment (with or without premolar extractions) does not inevitably lead to midface deficiency or to poor esthetic outcomes. In the majority of the patients in this study, there was a considerable esthetic improvement. That is not to say that some of those patients would not have had better outcomes if they had been treated with orthognathic surgery. Nevertheless, if we are able to treat a child satisfactorily during the growth phase and the outcome is considered favorable in terms of both facial esthetics and occlusal function, then we have served our patients well. In the few patients who do have an unfavorable outcome, the option of orthognathic surgery is fortunately still available to them. The key to this final assessment after the attempted growth modification phase is not to undertake obviously irreversible treatment, such as the extractions of upper premolars (case AG), before all the likely positive and negative outcomes of treatment have been discussed in detail with patients and their families. We are strong believers in the place of orthognathic surgery within the overall treatment armamentarium. However, we would find it difficult to convince parents to delay treatment in all cases until the cessation of growth allowed children to be treated surgically, when there is a strong possibility that attempted growth modification treatment, with its combination of anteroposterior and vertical dental, skeletal and soft tissue effects, would provide a favorable or even comparable result.

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