Understanding the IOTN

A summary of the HSE guidelines for eligibility for orthodontic treatment so that dentists have a visual guide to which cases should be referred to a specialist.

Throughout our professional lives, we will be asked the question: “will I need braces?” A self-conscious teenager might ask, but what a worried parent may really be wondering is: “will my child be eligible for treatment within the HSE?” The modified Index of Treatment Need (IOTN) guidelines for eligibility were introduced in the HSE in 2007 as a way to assess orthodontic need objectively rather than subjectively. This article aims to offer a visual guide to simplify the IOTN guidelines on eligibility for referral to the HSE and aid general practitioners to offer advice to their patients and refer appropriately.

A healthy smile starts at home with good habits regarding diet, snacks, drinks and brushing, which are key to a healthy dental future. Only patients with good oral hygiene and dental health are eligible for orthodontic treatment.

AGES 8/9:
Keep the child’s age in mind when assessing dentition or looking at OPGs (see normal eruption dates). Dental age and chronological age are not always the same so be alert to an abnormal sequence or asymmetric eruption patterns. Contralateral teeth should erupt within six months of each other. Refer if interceptive treatment is appropriate.

AGES 10-12:
Check family history for anomalies such as impacted canines. Palpate for canines and monitor dental development. A median diastema can be normal before the canines erupt. Check for severe skeletal problems, an overjet >9mm, impacted teeth, missing teeth and crossbites with displacements, and refer for orthodontic assessment if appropriate.

AGES 12+:
Check aesthetic component once the canines have erupted. Refer 4d cases with AC 8-10 or other eligible patients.

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Ciara wishes to acknowledge the assistance of Dr Marielle Blake of the HSE and Dr Sinéad O’Hanrahan of the OSI in the preparation of this material.
Impeded eruption of teeth (except for third molars) due to crowding, displacement, the presence of supernumerary teeth, retained deciduous teeth and any pathological cause.

UR1 has failed to erupt and the sequence is disrupted as UR2 has erupted.

A conical supernumerary may displace or delay eruption of the permanent tooth; tuberculates usually obstruct eruption.

Canines should be palpable buccally. Peg laterals can increase risk of impaction.

Canines can be palatal or high and buccally impacted. Interceptive treatment can help, so refer.

Canines can cause resorption of permanent teeth, so radiographs can help to locate and determine urgency.

Reverse overjet >3.5mm with reported masticatory and speech difficulties.

A marked reverse overjet. Always check for a displacement.

The profile and underlying skeletal pattern can determine if interception is indicated.

Maxillary deficiency may cause poor upper tooth show and poor upper lip support.

Cephalometrics and clinical examination will determine the treatment plan and timing.

Severe Class III malocclusions with marked Skeletal III base will usually benefit from joint planning and orthognathic surgery as a young adult.

Defects of cleft lip and palate (CLP), and other craniofacial anomalies.

CLP patient’s treatment should be co-ordinated by the national cleft unit.

Caries and early tooth loss can further complicate difficult malocclusions, so diet and oral hygiene are key.

Maxillary expansion and bone grafting in the mixed dentition help dental development.

Dental anomalies can include enamel hypoplasia, hypodontia and impacted canines.

Patients will have complex dental needs and benefit from joint orthodontic, orthognathic and restorative planning.

Infraocclusion, such as this LLE, can be severe in young children.

Infraoccluded molars LRE, LRD, LLE.

Infraoccluded primary molars can cause increased overbites and lateral open bites.

Infraoccluded molars can delay or prevent eruption of permanent teeth and may need to be removed.
Reverse overjet >3.5mm with no masticatory or speech difficulties. See 5m.

Anterior or posterior crossbites with >2mm discrepancy between retruded contact position and intercuspal position.

Severe contact point displacements >4mm (in HSE modification, eligible only if AC is 8, 9 or 10).

Eligibility of 4d cases is based on the appearance of the upper anterior segment only.

The aesthetic component is assessed in the early permanent dentition, AFTER the upper canines have erupted.

Cases do not need to match the 8-10 pictures, just look as severe.

Anterior crossbites can cause damage to the hard and soft tissues such as tooth wear and dehiscence.

Interception with a URA/RME can relieve the displacement and expand the upper arch.

Postural Class III malocclusion.

Extracting over-retained primary teeth can improve the position of displaced teeth.

The patient can achieve edge to edge and there is a forward displacement.

Severe crowding with high aesthetic component is eligible.

Cases with anterior and posterior crossbites can also have a high aesthetic component.

This patient has moderate crowding and IOTN 4d, but is not eligible as the AC <8.

### Eruption patterns

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<th>Eruption pattern of permanent teeth</th>
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<th>Average eruption dates of deciduous teeth (in months)</th>
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References

The Aesthetic Component (AC)

The AC is a series of photographs rating dental attractiveness on a scale of 1-10. It was developed at the University of Manchester using laypersons to grade the photographs. In the HSE, the AC is used for 4d cases. Only cases with an AC of 8-10 are eligible for treatment.

Early intervention to stop digit sucking or tongue thrust can improve malocclusion.

A traumatic overbite may strip the palatal gingivae of the incisors or cause indentations.

Reverse overjet in early mixed dentition.

Digit habits can also cause increased overjet and posterior crossbites so these need to stop.

There may also be labial trauma.

Interception to expand and protract may be helpful.

The smile line and tooth show can be poor if habits persist.

Refer for treatment while still growing.

Interception may be indicated to procline incisors and expand.

Patients with long faces and high mandibular plane angles can be prone to anterior open bites and get worse with growth.

Patients with short faces and low mandibular plane angles are more prone to deep bites and get worse with growth.

Cephalometrics will show the scope for interception, Class III cases may get worse with growth.

Severe skeletal open bites are best managed with orthognathic surgery in young adults.

Refer while growing, when bite planes can reduce the overbite. Adults with traumatic overbites may require orthognathic surgery.

Definitive treatment planning best after puberty to determine scope for camouflage or need for orthognathic surgery.