










Tierärztliches Kompetenzzentrum GroßWaldstadt Altano Gruppe EquiProDentaria (gegründete Mitglieder der IGFP)

Trident 2025 Doncaster

INCISOR ADJUSTMENT – A FASHIONABLE TREND OR A NECESSARY PART OF DENTAL TREATMENT GUIDELINES AND SCIENCE

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Rules and questions

- Nearly every equine dental treatment needs an adjustment of the incisors
- It has to be in relation to the molar treatment
- How much is to adjust?
- Does a cookie cutter exist about how much?
- Are there guidelines?
- What has been published till now?
- What is practicable for our daily work?



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Nearly every equine dental treatment needs an adjustment of the incisors

- the more horses are fed with unnatural feed, this lower the abrasion of the incisors
- In different countries the feeding is different!
- I was comparing Horses in the US, Egypt, Mexico, Brasil, South of France, Spain, Caribic, and several regions, too
- Every Country has as a result of their feeding different amounts of malabrasions in cheek teeth and incisors.
- Correction of the malabrasions of the cheek teeth is famous, but incisors has malabrasion, too !!!
- Adjustment is important!
 - Correction of the angle of the occlusal surfaces towards the TMJ or little lower

publication: Kaufflächenwinkel equiner Schneide- und Backenzähne: Computergestützte Messungen an detailgestrichen, anatomischen 3D-Modellen. Laura Schröter (born Listmann) 2017
Occlusal angles of equine incisors L. Listmann, P. Schrock, K. Falling, C. Słazzyk DOI: 10.1177/0898756417739465

also Dixon 2002 (7 horses) : Result: that horses that are fed with feed with a high roughage content have a flatter chewing surface angle due to the greater laterolateral displacement of the lower jaw during mastication (Bonin et al., 2007). Feeding with high-energy, low-fiber feed leads, according to steepen occlusal chewing surface angles (Dixon, 2002). The structure of the feed therefore also has an influence the chewing surface.

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Adjustment of the angle

- an incorrect occlusion or malocclusion during the chewing process not only leads to problems, but also has an impact on the health of the temporomandibular joint and on the whole organism (Ros, 2011)

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Result of the study

- Angle toward the TMJ or lower (Statistically significant)
- Barr is usefull, but be carefull with the bending of the lower barr in older horses

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young



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Middle age



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old



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latrogen opened Pulp 302

Hämatoma unknown reason

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Principles of Adjustment

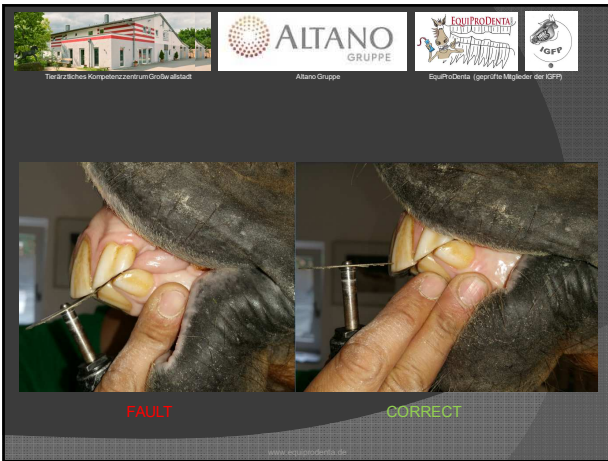
- Angle towards TMJ or lower
- Reducing in relation to the cheekteeth
- Grinding / cutting

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Towards the TMJ or lower

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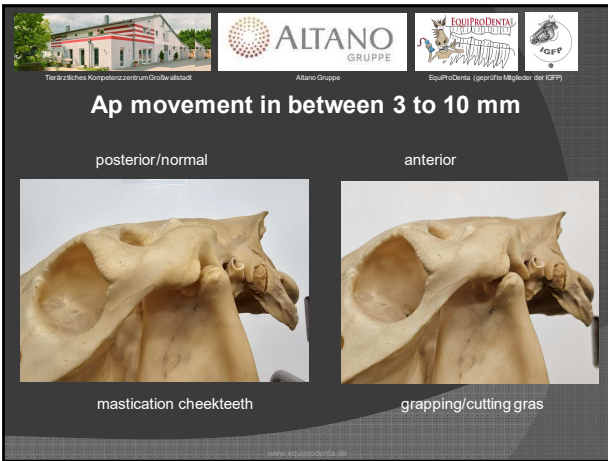


Practical Guideline for adjustment

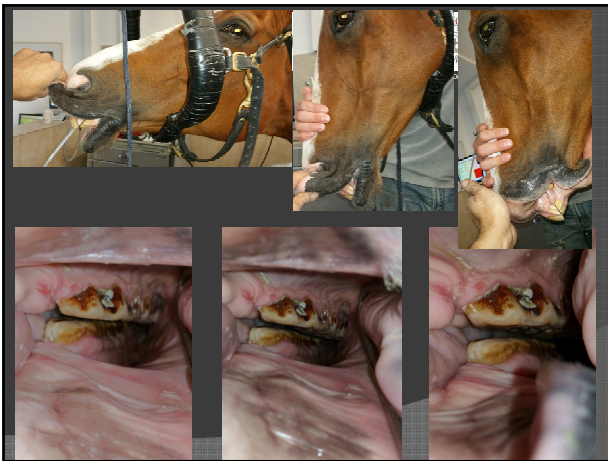
- Because of anterior-posterior movement of the lower jaw the molars get a gap, when the horse is cutting or plucking the grass
- The condylus of the mandible goes forwards and the molars separate
- This is sensful to have only pressure on the incisors
- For chewing the horse lift the head up and have only contact on the cheek teeth because of the posterior shift















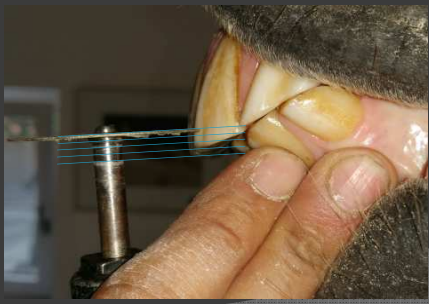
adjustment

- There are many ways to adjust the malabrasion of the incisors
- Grinding with a disk
- Cutting with a thin disk
- Grinding with a burr (you have to ask Paolo Zaluski, Brasil)
- Handfloat ????? (perfect adjustment in my eyes pretty difficult)

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grinding




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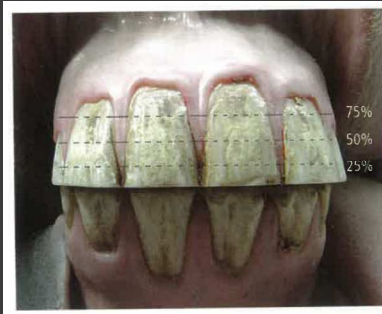
cutting



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Guidelines for the incisor work



Interdental gingivaretraction

- 25 % retraction = Degree 1
- 50 % retraction = Degree 2
- 75 % retraction = Degree 3
- > 75 % retraction = Degree 4

Published 2010 Zahnatlas der Pferde Zähne Grell/Maleh ISBN 978-3-7945-2693-2

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Gingiva retraction degree 1 up to 25 %



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Gingiva retraction degree 2 up to 50 %



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Tierärztliches Kompetenzzentrum Großstadt Altano Gruppe EquiProDenta (gegründet Mitglieder der FGFP)

Gingiva retraction degree 3 up to 75 %



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Gingiva retraction degree 4 more than 75 %



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Guideline


- Empirical experience shows that the more gingiva is retracted between the incisors, the higher the secondary dentine column is and as more could be adjusted
- Adjustment of incisors always in relation to the cheek teeth
- Adjustment of incisors give the possibility to use all cheek teeth
- Low adjustment means higher pressure on the last cheek teeth with no pressure on the first cheek teeth
- Horses are regulating the force by them self (like us)

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Example 1

- 7 year old gelding
ramps 306 < 406, little wave 110/210, slight TR 308/408
DGL4, occlusion before left 50%, right 75%



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Example 2

- 9 year old QH gelding
extraction 209
slight beak on 306/406, slight wave 110/210
slight DGL 3, occlusion before 60%

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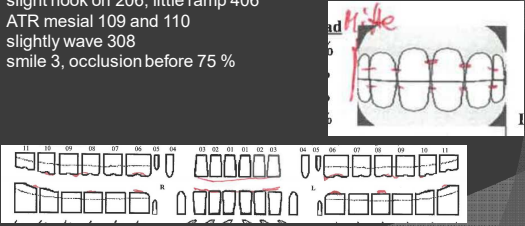
Example 2 occlusion surface

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Example 3

- 13 year old german warmblood gelding
- slight hook on 206, little ramp 406
- ATR mesial 109 and 110
- slightly wave 308
- smile 3, occlusion before 75 %



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Example 3



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Example 3 occlusion surface




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Example 3



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Example 4

- Ponteno, 16 year old PRE gelding with DGL 3; 6 mm reduction of 303



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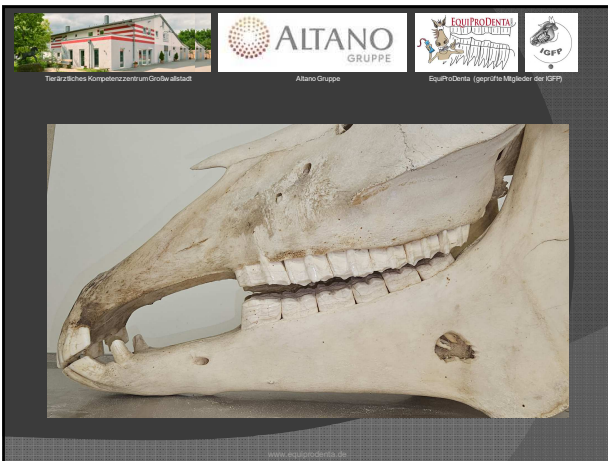


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??? incisor adjustment a „NO GO“ ???

- There are still a lot of publications and vets or technicians who think and tell, that incisor adjustment is a bullshit!
- What happens, if the horses are treated only on the cheekteeth?
- Example:

www.konkordanz.com



Before and after incisor adjustment

Before :
 0 % occlusion
 Lets 35 mm
 Normal mandible-maxilla relation

After:
 75 % occlusion
 Lets 9 mm

Also Publications which should have know

EDT Jim Koostra, DVM
 Debra Shoulders:
 „The effect of Equine dental Procedures on Temporomandibular (TMJ) Sensitivity“

Western Kentucky University

The Effect of Equine Dental Procedures on Temporomandibular (TMJ) Sensitivity
 Debra Shoulders, DVM, DABVP, MS, MRCV, and Jim Koostra, DVM, MS, MRCV, MRCR
 Western Kentucky University

Objective: The purpose of this study was to determine the effect of dental procedures on TMJ sensitivity in horses.

Methods: Ten horses were enrolled in the study. All horses underwent a dental procedure (floating) and were then monitored for TMJ sensitivity for a period of one week. TMJ sensitivity was defined as the presence of pain or discomfort in the TMJ area.

Results: The results of the study showed that dental procedures significantly reduced TMJ sensitivity in horses. The majority of horses (8 out of 10) showed a decrease in TMJ sensitivity within one week of the dental procedure.

Conclusion: Dental procedures are an effective way to reduce TMJ sensitivity in horses. This study provides evidence that dental procedures can significantly improve the quality of life for horses with TMJ sensitivity.

Also Publications which should have know

EDT Jim Koostra, DVM
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 „Resolution of TMJ Sensitivity one week after Equine Dental Procedures“

Western Kentucky University


Resolution of Temporomandibular Joint (TMJ) Sensitivity One Week After Equine Dental Procedures
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Result

- Pre-procedure, 52.5% of horses exhibited TMJ sensitivity (average WKU
- TMJ score =0.425). At 7 days post-procedure, sensitivity prevalence
- decreased to 5.26% (mean WKU TMJ score: 0.053). The average TMJ
- score significantly decreased one week after treatment compared to
- before the dental (P=0.002). The three horses in the study presented
- with TNJ sensitivity one week after the dental procedure, but showed a
- significant improvement overall, with their average WKU TMJ Score
- decreasing from 3.67 to 1,33



Also Publications which should have know


- Jim Koostra also had made research about:
 - „The Impact of Incisor Malocclusions“
 - „ Impact of Malocclusions on Body Condition Score in Geriatric Horses“

Material: 163 horses over 3 years for 383 dental charts



Also Publications which should have know


- Equine Odontoclastic Tooth Resorption and Hypercementosis (EOTRH) in Icelandic Horses in Germany: A Correlation Between Clinical and Radiographic Findings
Melusine Tretow, Anna M. Hain, Astrid Bienert-Zeit
DOI: 10.1177/08987564241308731
- Potential impact of natural conditions on the rostral oral health: a study of horses in Iceland
Anna M. Hain, Melusine Tretow, Astrid Bienert-Zeit
DOI: 10.2460/javma.23.06.0303
- Relation between Headposition and Messurement of the occlusion
Souel Maleh, Antrin Fricke



Take home message

- Adjustment is highly necessary
- Scientific proved and published about the secondary dentin layer most of the incisors could be shortened about 4 mm
!!!! CAVE DGL !!!
- Interdental gingiva retraction is a good guideline
- Secondary dentin colour is a very good guideline
- It was only 1 tooth with 0,7 mm out of 156 teeth (0,64%)
- **!!! You could help 99,36 %, if you are not guided by the most extreme result !!!**

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Take home message

- **BUT Don't forget !!!!!!!**
- How many or few incisors need to be adjusted depends on the horse's diet in your region and the conditions under which it is kept. There are regions in Germany where horse husbandry and feeding is so natural that hardly any adjustment of the incisors is necessary, as the incorrect wear due to natural feeding is minimal. In my region, the abnormal wear of incisors is extreme because the feeding is very far removed from natural feeding.

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Thanks you for your attention – QUESTIONS ?



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News For horse owners The IGFP

23th IGFP - conference 2026

Friday 06. and Saturday 07. March 2026

more information will follow soon ...

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Simultaneous translation
