

辺縁骨の維持と Astra Tech Implant System™

歯科インプラントシステムの設計上の特徴は、長期の辺縁骨の安定にとって非常に重要である。実際、Astra Tech Implant System™ は辺縁骨支持を維持するよう設計されており、いくつかの前向き長期（5年以上）研究によりこれが認められている*。

歯周病治療患者における辺縁骨レベル変化の分布を報告している研究では、機能3-10年後64-88%のインプラントが1.5 mm以下の変化だったことを示している¹⁻⁴。辺縁骨レベル変化の平均値を表している前向き研究から、アストラテックインプラント周囲で起る機能後1年間の骨レベル変化は非常に小さく、それは約0.3 mmであると結論付けることができる⁴⁶⁻⁵⁵。平均で5年フォローアップでの骨レベルは0.3 mmで維持される¹⁵⁻³⁰。10年或いはそれ以上のフォローアップ研究（10年⁵、12年⁶、16年⁷）からの数字も、平均0.3 mmの骨レベル変化を報告している。このように、アストラテックインプラントの文献は、長期的な観点で非常に良好に辺縁骨レベルが維持されることを示している。

以下の表は公表された前向き研究を示している。これらの研究は、10名以上の患者を対象とし、機能後1年以上のアストラテックインプラントに隣接したレントゲンで計測した平均辺縁骨レベル変化を報告している。全ての研究がレントゲンの評価したインプラント結果のための現行の成功基準に対し良好な結果を示している⁸⁻¹⁰（即ち、初年度は1 mmより少なくその後は年間0.2 mmより少ない骨吸収）。さらに、メタアナリシス¹¹は、Astra Tech Implant System™ が現行受け入れられている成功基準⁸⁻¹⁰よりもはるかに良好な結果を示していると結論付けている。

*Astra Tech Implant System™ に関する主張の拡大が2009年9月FDAにより許可されている。

第一著者	平均 MBL ^a 変化 (mm)	フォローアッ プ期間 (年)	患者数	修復 ^b	インプラン ト生存率 (%)	負荷 ^c
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5年以上のフォローアップ

Jacobs et al. 2010 ^{7q}	0.02	16	18	F	100	3
Van Assche et al. 2011 ^{12r}	0.70	12	18	F	100	3
Vroom et al. 2009 ⁶	0.20	12	20	OD	100	3
Gotfredsen 2009 ⁵ⁿ	0.75 [#]	10	20	S	100	3
Mertens et al. 2010 ¹³	0.30	8	17	F	99	3
Rasmusson et al. 2005 ¹⁴	1.07	7	36	F	96.9	3

5年間フォローアップ

Akoglu et al. 2011 ¹⁵	0.34	5	12	OD	100	2
Arvidsson et al. 1998 ¹⁶ⁱ	0.26	5	107	F	98.7	3
Cecchinato et al. 2008 ^{17j}	0.07 [#]	5	84	F	情報なし	3・
Chang et al. 2010 ¹⁸	0.38	5	43	F	情報なし	3
Cooper et al. 2008 ¹⁹	+ 0.09	5	59	OD	95.9	2・
Davis et al. 1999 ²⁰	0.15 [#]	5	25	OD	92	3
Gotfredsen et al. 2000 ²¹	0.20	5	26	OD	100	3
Gotfredsen et al. 2001 ²²	0.37 [#]	5	50	F	97.6	3
Gotfredsen 2004 ^{23o}	0.30 [#]	5	20	S	100	3
Makkonen et al. 1997 ²⁴	0.48	5	33	F、OD	98.7	3
Palmer et al. 2000 ^{25h}	+ 0.12 [#]	5	15	S	100	3
Schliephake et al. 2012 ²⁶	0.08	5	44	F	100	2・
Wennström et al. 2004 ²⁷	0.41	5	51	F	94.1	3
Wennström et al. 2005 ²⁸	0.11	5	40	S	97.4	3
von Wowern et al. 2001 ²⁹	0.24 [#]	5	22	OD	100	3
Åstrand et al. 2004 ^{30d}	0.26 [#]	5	33	F	98.4	3

3年間フォローアップ

Arvidsson et al. 1992 ^{31m}	0.01 [§]	3	54	F	98.1	3
Cooper et al. 2007 ^{32f}	0.42	3	48	S	94	2・
Engquist et al. 2002 ^{33e}	0.24 [#]	3	33	F	98.9	3
Geckili et al. 2011 ³⁴	0.88	3	52	OD	100	2
Lee et al. 2007 ³⁵	0.38 [#]	3	17	F	100	3
Palmer et al. 2005 ³⁶	0.13	3	19	F	情報なし	3
Palmer et al. 2012 ³⁷	0.20	3	29	S	100	2・
Yi et al. 2001 ³⁸	0.21	3	43	F	100	3

2年間フォローアップ

Bilhan et al. 2010 ³⁹	0.66	2	情報なし	F	100	3
Cecchinato et al. 2004 ^{40k}	0.10 [#]	2	84	F	情報なし	3・
Gotfredsen et al. 1993 ⁴¹	0.31	2	20	OD	97.5	3
Karlsson et al. 1998 ⁴²	0.24	2	50	F	97.7	3
Karlsson et al. 1997 ⁴³	0.31	2	47	S	100	3
Palmer et al. 1997 ⁴⁴ⁱ	0.01	2	15	S	100	3
van Steenberghe et al. 2000 ^{45p}	0.20	2	18	F	100	3

第一著者	平均 MBL ^a 変化 (mm)	フォローアップ期間 (年)	患者数	修復 ^b	インプラント生存率 (%)	負荷 ^c
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1 年間フォローアップ

Balleri et al. 2010 ⁴⁶	0.36 [#]	1	20	F	100	3
Cooper et al. 2001 ^{47g}	0.40	1	52	S	96.2	2・
Galindo-Moreno et al. 2011 ⁴⁸	0.07	1	69	S	95.9	2・
Guljé et al. 2011 ⁴⁹	0.1	1	12	OD	96	3
Kemppainen et al. 1997 ⁵⁰	0.13	1	37	S	97.8	3
Kim et al. 2010 ⁵¹	0.06 [#]	1	12	F	100	3
Liaje et al. 2012 ⁵²	0.21	1	情報なし	S、F	100	2・
Nordin et al. 1998 ⁵³	0.05	1	10	F	100	3
Piero et al. 2011 ⁵⁴	0.36	1	15	S、F	100	3
Veltri et al. 2008 ⁵⁵	0.30	1	12	F	100	3

高度な外科手法と即時負荷方式、および指定されたフォローアップ期間

Dasmah et al. 2011 ^{56s}	0.70*	5	15	F	98.7	3
Mertens et al. 2011 ⁵⁷	0.10*	5	17	S、F	97	1&2・
Collaert et al. 2008 ⁵⁸	0.72	3	25	F	100	1・
De Bruyn et al. 2008 ⁵⁹	1.20	3	25	F	100	1・
Gökçen-Röhlig et al. 2010 ⁶⁰	1.30 ^{#*}	2	10	OD	100	3
Kahnberg 2009 ⁶¹	0.56 ^{#*}	2	26	S	100	3
Collaert et al. 2011 ⁶²	0.11	2	25	F	100	1・
Barbier et al. 2011 ⁶³	0.21	1	20	F	100	1・
Cooper et al. 2010 ⁶⁴	+1.30* 0.40	1 1	55 58	S S	94.5 98.3	1・ 1・
Donati et al. 2008 ⁶⁵	0.31 [#]	1	151	S	97.5	1&3・
Koutouzis et al. 2011 ⁶⁶	0.19*	1	18	S	95	1・
Norton 2004 ⁶⁷	0.40	1	25	S	96.4	1・
Pieri et al. 2011 ⁶⁸	0.38 ^{#*}	1	20	F	98.7	2
Rismanchian et al. 2011 ⁶⁹	0.48	1	10	F	100	1 & 2
Thor et al. 2005 ^{70t}	0.50*	1	19	F	98.7	3
Toljanic et al. 2009 ⁷¹	0.50	1	51	F	96	1・
Tsuda et al. 2011 ⁷²	+0.10*	1	10	S	100	1・
Van de Velde et al. 2009 ⁷³	0.75 [#]	1	25	F	100	1・
Valentini et al. 2010 ⁷⁴	0.30 ^{#*}	1	40	S	95.3	1・

^a 報告された平均辺縁骨レベル変化：ベースライン（インプラント埋入またはプロビジョナル/永久負荷）からフォローアップ期間が終了するまで測定。

[#] 異なるサブグループの骨レベル変化が示され、新しい平均値が計算されている。

* インプラントが移植または増成された骨に埋入されたか、抜歯窩に即時埋入された。

^s 中央値の報告がある。

^b S= 単独歯、F= 固定式修復、OD= オーバーデンチャー

^c 1= 即時負荷、2= 早期負荷、3= 従来式の負荷、・= 1 回法の外科術式

^{d,e} 同じ材料に関する報告

^{h,i} 同じ材料に関する報告

^{l,m} 同じ材料に関する報告

^{p,q,r} 同じ材料に関する報告

^{f,g} 同じ材料に関する報告

^{j,k} 同じ材料に関する報告

^{n,o} 同じ材料に関する報告

^{s,t} 同じ材料に関する報告

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