

# Clinical trials of DDD

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## 1 atrioventricular block or sick sinus syndrome

Trial	Treatments	Patients	Trials design and methods
<b>DDD vs VVI</b>			
Avery , 1994 n=13/13 follow-up:	DDD versus VVI	AV block	
Boon , 1987 n=15/15 follow-up:	DDD versus VVI	AV block or SSS,	Cross over
Channon , 1994 n=16/16 follow-up:	DDD versus VVI	AV block	Cross over
Kenny , 1986 n=10/10 follow-up:	DDD(100), DDD(150) versus VVI	AV block or SSS or both	Cross over
Mitsuoka , 1988 n=16/16 follow-up:	DDD versus VVI	AV block or SSS	Cross over
Rediker , 1988 n=19/19 follow-up:	DDD versus VVI	AV block or SSS	Cross over
Sulke , 1992 n=16/16 follow-up:	DDD versus VVI	AV block or SSS or both	Cross over
<b>DDD, DDIR, DDDR vs VVI</b>			
Sulke , 1991 n=22/22 follow-up:	DDD, DDIR, DDDR versus VVI	AV block or SSS or both	Cross over
<b>DDD,DDDR vs VVI</b>			
Capucci , 3000 n=14/14 follow-up:	DDD,DDDR versus VVI	AV block or SSS or both	Cross over
<b>DDD,DDI vs VVI</b>			

continued...

<b>Trial</b>	<b>Treatments</b>	<b>Patients</b>	<b>Trials design and methods</b>
Heldman , 1990 n=40/40 follow-up:	DDD,DDI versus VVI	AV block or SSS or both	Cross over
<b>DDDR,DDIR vs VVI</b>			
Hijer , 2002 n=19/19 follow-up:	DDDR,DDIR versus VVI	AV block or SSS	Cross over
<b>DDD vs VVIR</b>			
Deharo , 1996 n=18/18 follow-up:	DDD versus VVIR	AV block	Cross over
Hargreaves , 1995 n=20/20 follow-up:	DDD versus VVIR	AV block	Cross over
Linde-Edelstam , 1992 n=17/17 follow-up:	DDD versus VVIR	AV block	Cross over
Lukl , 1994 n=21/21 follow-up:	DDD versus VVIR	AV block or SSS	Cross over
Menozzi , 1990 n=14/14 follow-up:	DDD versus VVIR	AV block	Cross over
Oldroyd , 1991 n=10/10 follow-up:	DDD versus VVIR	AV block	Cross over
Saner and Fricker , 3000 n=12/12 follow-up:	DDD versus VVIR	AV block or SSS	Cross over
<b>DDD,DDDR vs VVIR</b>			
Lau (2) , 1994 n=33/33 follow-up:	DDD,DDDR versus VVIR	AV block or SSS	Cross over
<b>DDDR vs VVIR</b>			
Kamalvand , 1997 n=48/48 follow-up:	DDDR, DDDR with mode switching versus VVIR	AV block or SSS or both	Cross over

continued...

Trial	Treatments	Patients	Trials design and methods
<b>MOST , 2002</b> [NCT00000561] n=NA follow-up:	DDDR versus VVIR	AV block or SSS	Parallel groups
<b>PASE , 1998</b> n=NA follow-up:	DDDR versus VVIR	SSS or AV block	Parallel groups
<b>Sulke , 1994</b> n=10/10 follow-up:	DDDR versus VVIR	AV block or SSS or both	Cross over
<b>Wharton , 1998</b> n=NA follow-up:	DDDR versus VVIR	SSS (with tachybrady syndrome)	Parallel groups
<b>DDDR vs VVIR,AAIR</b>			
<b>Lau (1) , 1994</b> n=15/15 follow-up:	DDDR versus VVIR,AAIR	SSS	Cross over

More details and results :

- pacemaker for atrioventricular block or sick sinus syndrome in all type of patients at <http://www.trialresultscenter.org/go-Q161>

## References

### Avery, 1994:

Avery P, Banning A, Lawson T, McGurk L, Buchalter M Physiological pacing improves symptoms and increases exercise capacity in the elderly patient. *Int J Cardiol* 1994;46:129-33 [7814161]

### Boon, 1987:

Boon NA, Frew AJ, Johnston JA, Cobbe SM A comparison of symptoms and intra-arterial ambulatory blood pressure during long term dual chamber atrioventricular synchronous (DDD) and ventricular demand (VVI) pacing. *Br Heart J* 1987;58:34-9 [3304370]

### Channon, 1994:

Channon KM, Hargreaves MR, Cripps TR, Gardner M, Ormerod OJ DDD vs. VVI pacing in patients aged over 75 years with complete heart block: a double-blind crossover comparison. *Q J Med* 1994;87:245-51 [8208915]

### Kenny, 1986:

Kenny RA, Ingram A, Mitsuoka T, Walsh K, Sutton R Optimum pacing mode for patients with angina pectoris. *Br Heart J* 1986;56:463-8 [3790382]

### Mitsuoka, 1988:

Mitsuoka T, Kenny RA, Yeung TA, Chan SL, Perrins JE, Sutton R Benefits of dual chamber pacing in sick sinus syndrome. *Br Heart J* 1988;60:338-47 [3056477]

### Rediker, 1988:

Rediker DE, Eagle KA, Homma S, Gillam LD, Harthorne JW Clinical and hemodynamic comparison of VVI versus DDD pacing in patients with DDD pacemakers. Am J Cardiol 1988;61:323-9 [[3341209](#)]

**Sulke, 1992:**

Sulke N, Dritsas A, Bostock J, Wells A, Morris R, Sowton E "Subclinical" pacemaker syndrome: a randomised study of symptom free patients with ventricular demand (VVI) pacemakers upgraded to dual chamber devices. Br Heart J 1992;67:57-64 [[1739528](#)]

**Sulke, 1991:**

Sulke N, Chambers J, Dritsas A, Sowton E A randomized double-blind crossover comparison of four rate-responsive pacing modes. J Am Coll Cardiol 1991;17:696-706 [[1993790](#)]

**Capucci, 3000:**

**Heldman, 1990:**

Heldman D, Mulvihill D, Nguyen H, Messenger JC, Rylaarsdam A, Evans K, Castellonet MJ True incidence of pacemaker syndrome. Pacing Clin Electrophysiol 1990;13:1742-50 [[1704534](#)]

**Hijer, 2002:**

Hijer CJ, Brandt J, Willenheimer R, Juul-Mller S, Bostrm PA Improved cardiac function and quality of life following upgrade to dual chamber pacing after long-term ventricular stimulation. Eur Heart J 2002;23:490-7 [[11863352](#)]

**Deharo, 1996:**

Deharo JC, Badier M, Thirion X, Ritter P, Provenier F, Graux P, Guillot C, Mugica J, Jordaens L, Djiane P A randomized, single-blind crossover comparison of the effects of chronic DDD and dual sensor VVIR pacing mode on quality-of-life and cardiopulmonary performance in complete heart block. Pacing Clin Electrophysiol 1996;19:1320-6 [[8880795](#)]

**Hargreaves, 1995:**

Hargreaves MR, Channon KM, Cripps TR, Gardner M, Ormerod OJ Comparison of dual chamber and ventricular rate responsive pacing in patients over 75 with complete heart block. Br Heart J 1995;74:397-402 [[7488454](#)]

**Linde-Edelstam, 1992:**

Linde-Edelstam C, Nordlander R, Pehrsson SK, Rydn L A double-blind study of submaximal exercise tolerance and variation in paced rate in atrial synchronous compared to activity sensor modulated ventricular pacing. Pacing Clin Electrophysiol 1992;15:905-15 [[1376903](#)]

**Lukl, 1994:**

Lukl J, Doupal V, Heinc P Quality-of-life during DDD and dual sensor VVIR pacing. Pacing Clin Electrophysiol 1994;17:1844-8 [[7845778](#)]

**Menozi, 1990:**

Menozi C, Brignole M, Moracchini PV, Lolli G, Bacchi M, Tesorieri MC, Tosoni GD, Bollini R Inpatient comparison between chronic VVIR and DDD pacing in patients affected by high degree AV block without heart failure. Pacing Clin Electrophysiol 1990;13:1816-22 [[1704547](#)]

**Oldroyd, 1991:**

Oldroyd KG, Rae AP, Carter R, Wingate C, Cobbe SM Double blind crossover comparison of the effects of dual chamber pacing (DDD) and ventricular rate adaptive (VVIR) pacing on neuroendocrine variables, exercise performance, and symptoms in complete heart block. Br Heart J 1991;65:188-93 [[1827588](#)]

**Saner and Fricker, 3000:**

**Lau (2), 1994:**

Lau CP, Tai YT, Lee PW, Cheung B, Tang MO, Lam WK Quality-of-life in DDDR pacing: atrioventricular synchrony or rate adaptation? *Pacing Clin Electrophysiol* 1994;17:1838-43 [[7845777](#)]

**Kamalvand, 1997:**

Kamalvand K, Tan K, Kotsakis A, Bucknall C, Sulke N Is mode switching beneficial? A randomized study in patients with paroxysmal atrial tachyarrhythmias. *J Am Coll Cardiol* 1997;30:496-504 [[9247524](#)]

**MOST, 2002:**

Lamas GA, Lee KL, Sweeney MO, Silverman R, Leon A, Yee R, Marinchak RA, Flaker G, Schron E, Orav EJ, Hellkamp AS, Greer S, McAnulty J, Ellenbogen K, Ehlert F, Freedman RA, Estes NA 3rd, Greenspon A, Goldman L Ventricular pacing or dual-chamber pacing for sinus-node dysfunction. *N Engl J Med* 2002;346:1854-62 [[12063369](#)]

**PASE, 1998:**

Lamas GA, Orav EJ, Stambler BS, Ellenbogen KA, Sgarbossa EB, Huang SK, Marinchak RA, Estes NA 3rd, Mitchell GF, Lieberman EH, Mangione CM, Goldman L Quality of life and clinical outcomes in elderly patients treated with ventricular pacing as compared with dual-chamber pacing. *Pacemaker Selection in the Elderly Investigators. N Engl J Med* 1998;338:1097-104 [[9545357](#)]

**Sulke, 1994:**

Sulke N, Chambers J, Sowton E Variability of left atrial bloodflow predicts intolerance of ventricular demand pacing and may cause pacemaker syndrome. *Pacing Clin Electrophysiol* 1994;17:1149-59 [[7521041](#)]

**Wharton, 1998:**

Wharton JM, Sorrentino RA, Campbell P, Gonzalez-Zuelgaray J, Effect of pacing modality on atrial tachyarrhythmia recurrence in the tachycardia-bradycardia syndrome: preliminary results of the Pacemaker Atrial Tachycardia Trial3 *Circulation* 1998;98(18):Suppl (I): I-494, abstract.

**Lau (1), 1994:**

Lau CP, Tai YT, Leung WH, Wong CK, Lee P, Chung FL Rate adaptive pacing in sick sinus syndrome: effects of pacing modes and intrinsic conduction on physiological responses, arrhythmias, symptomatology and quality of life. *Eur Heart J* 1994;15:1445-55 [[7835358](#)]